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ADDRESS ALL COMMUNICATIONS TO
THE EXCAVATING ENGINEER PUBLISHING COMPANY
BRADLEE VAN BRUNT, Manager and Editor
267 NATIONAL AVENUE MILWAUKEE, WIS., U. S. A.

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Do Anything Steam Shovels Can Do, and

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139

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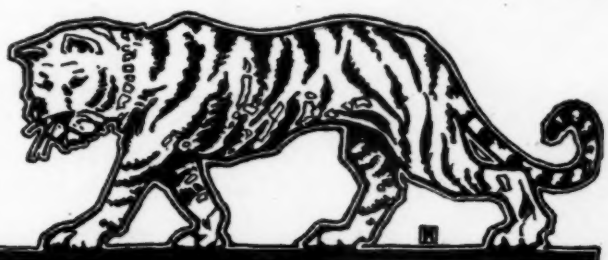

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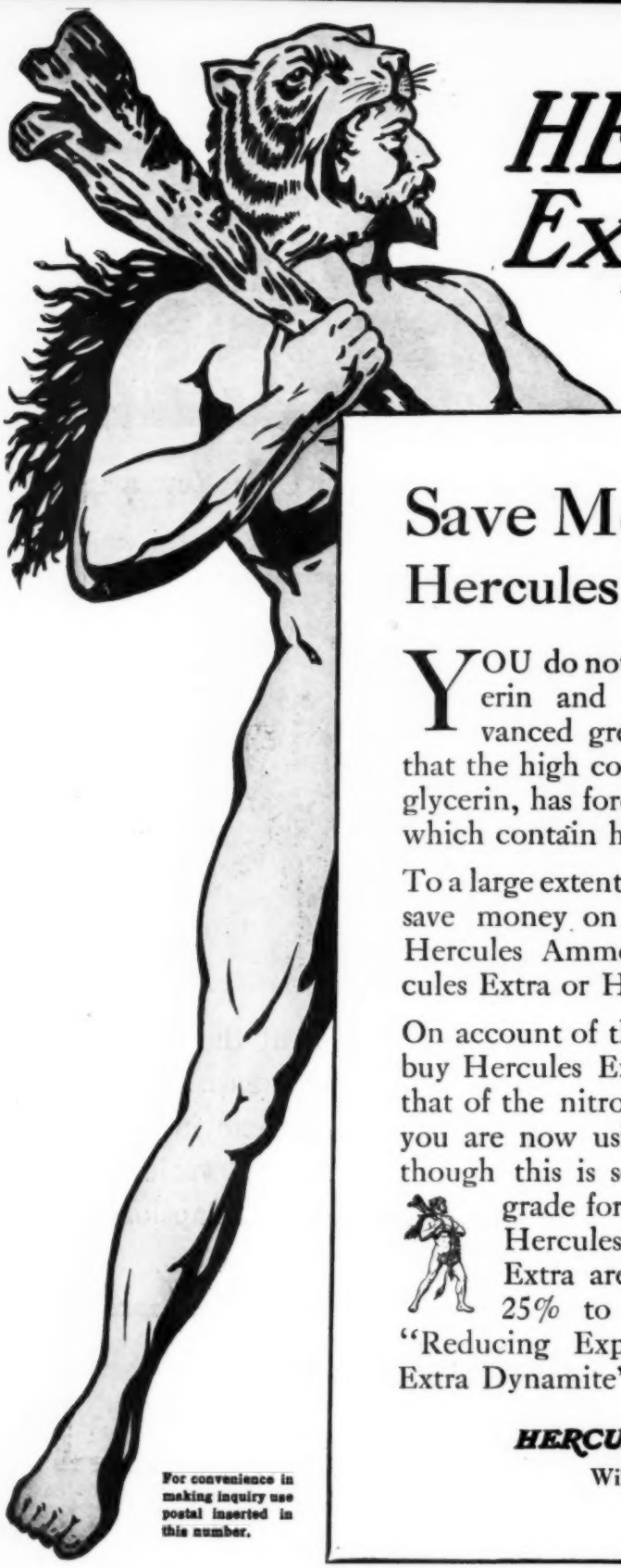

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On account of the difference in price you can buy Hercules Extra in strengths greater than that of the nitroglycerin or gelatin dynamite you are now using and still save money, though this is seldom necessary because the grade for grade strength is the same. Hercules Extra and Hercules L. F. Extra are made in all strengths from 25% to 60%. Write for booklet, "Reducing Explosives Costs with Hercules Extra Dynamite".

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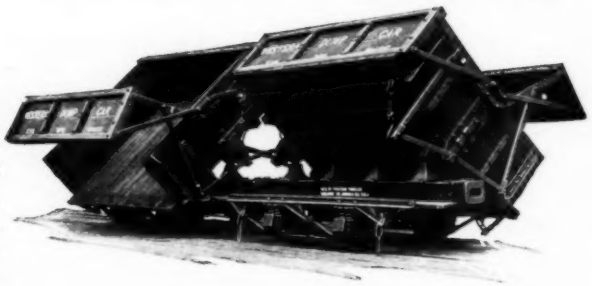
WESTERN

5-YARD CARS
36-IN. GAUGE



Designed to give greater output at reduced cost. This car will hold 25% more than the 4-yard car and is built to stay on the track. You save in loading and unloading on account of fewer cars required to handle the same amount of material. This new car is built on the same lines of our celebrated special or heavy duty 4-yard car, which is now conceded to be without a rival on the market.

Automatic Side Doors, Steep Dumping Angle and Large Discharge Opening.

Low cost of handling materials is back of Western Cars. They are making an enviable record for fast handling of material on a great variety of work. The low bidder generally gets the job. Be prepared to bid low by equipping yourself with Western Dump Cars. You can not increase the profit on your work by buying cheap equipment. Get cars that will be on the job every minute and that don't need constant repairing. These cars are built for the hardest kind of service; if you want to be sure and want to ease your mind of car worries, WESTERN is the car you want. We invite the most critical examination of the general design and details of these cars. Remember you can't go wrong, if you buy WESTERN.

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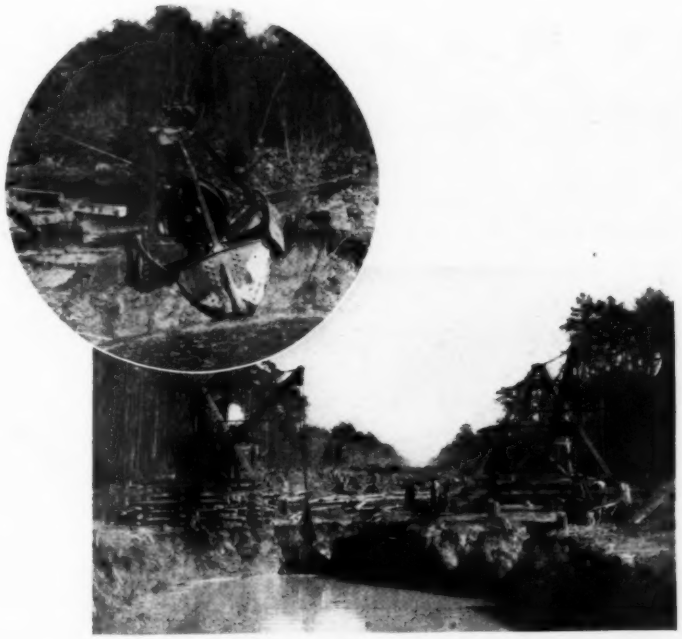

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For Dredging in Rivers and Harbors

HAYWARD
ORANGE PEEL BUCKETS

will do this class of work with the least amount of expense and labor. They will dig in any kind of soil—and when used for dredging the depth of the digging is only restricted by the length of the operating lines.

The digging capacity of Hayward Orange Peel Buckets is unequaled. Note the illustration of the bucket in the circle.

We build sizes and types of Hayward Buckets to meet all conditions and will be glad to send you copies of our illustrated pamphlets

THE HAYWARD COMPANY

BUILDERS OF ORANGE PEEL, CLAM SHELL, DRAG-SCRAPER and ELECTRIC MOTOR BUCKETS

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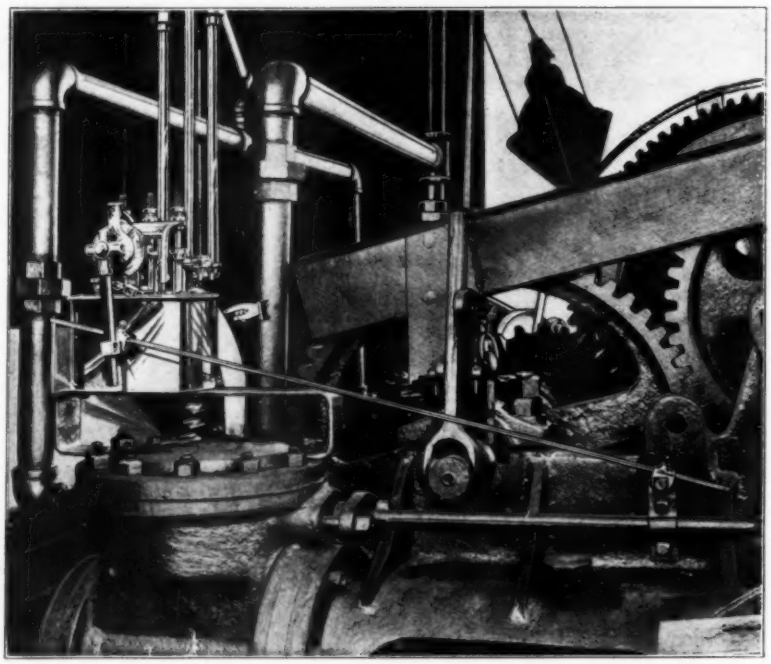

They may be had in any number of Feeds and Compartments with Heaters, without any extra charge.

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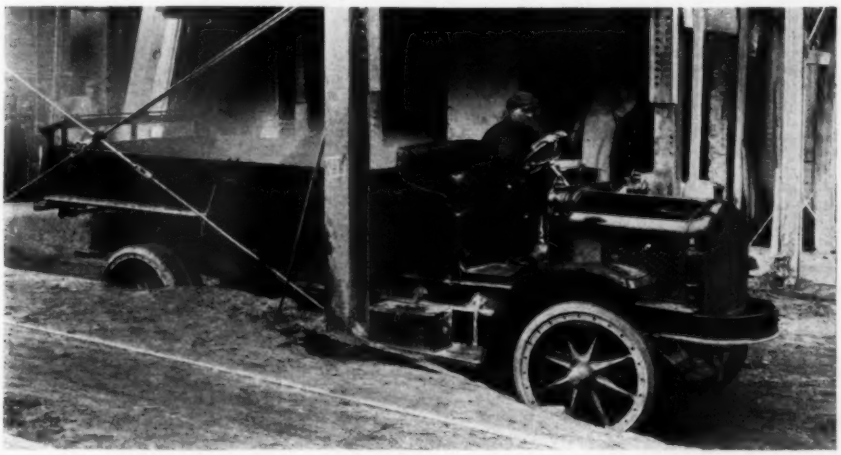

BUY SECOND WHITE TRUCK
on Cost Expert's Recommendation

SCIENTIFIC management governs the office of the Union Paving Company in Philadelphia, Pa. Efficiency is the slogan of the company and accurate cost records are kept on every operating expense. Particular emphasis is placed on haulage costs and the fact that the company has recently purchased its second White Truck on the recommendation of the cost expert, bespeaks the record of the truck for efficient, economical and dependable service.

The Union Paving Company owns fourteen trucks. Last August they purchased their first White Truck, which has since been engaged in hauling asphalt paving mixture, sand and stone, averaging 55 miles haul in a 10-hour working day. Its gasoline, oil and upkeep costs have been subject to the closest scrutiny.

"The White Truck has been economical and the fact that we have placed an order for another White Truck shows our opinion of the trucks," says C. B. Montgomery, who keeps the cost data.

The largest truck users of America, whose experience over a wide range of trucking service enables them to know motor truck value better than any one else, purchase Whites year after year in large fleets on the basis of accurately kept cost records.

THE WHITE COMPANY
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Awarded the ONLY GRAND PRIZE for Motor Trucks at the Panama-Pacific International Exposition, San Francisco

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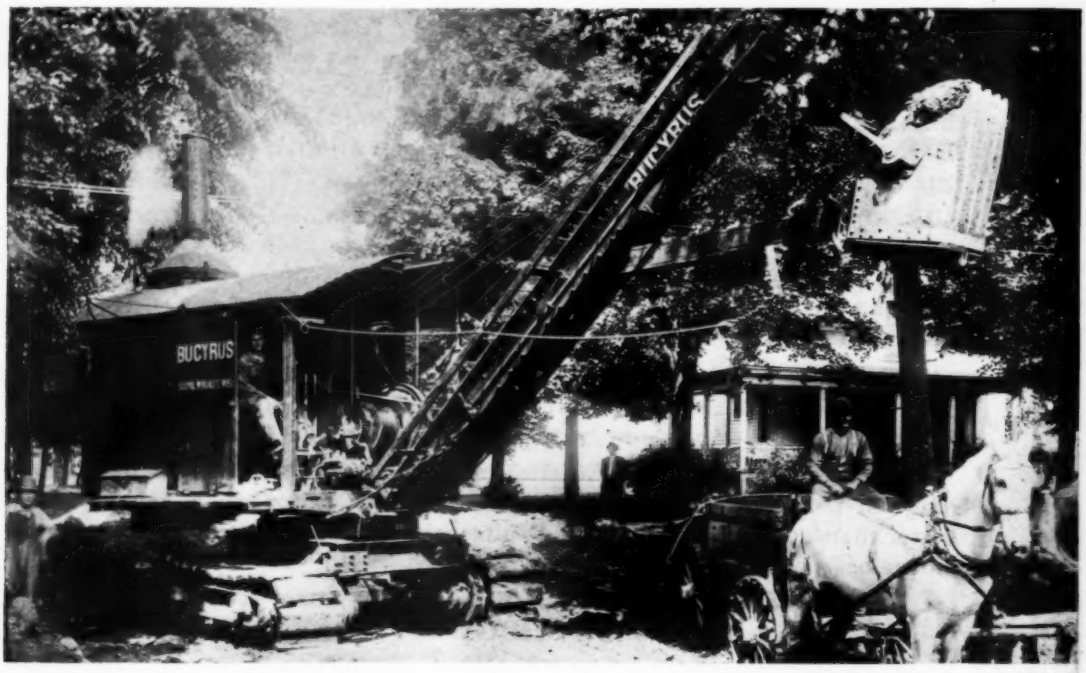

Two Views of a Caterpillar Revolving Shovel Used for Street Paving Work, City of Flint, Michigan, See Page 418.

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The Excavating Engineer

Vol. 12 AUGUST, 1916 No. 11

Levee Building by Dragline Excavator on the Mississippi River

Don B. Hearin & Son, formerly known as Hearin & Ryan, have since 1913, been using steadily a large dragline excavator for their levee contracts on the Mississippi River near Baton Rouge. We publish below a description of some of their earlier contracts under the Pontchatrain Levee Board. We hope to follow this article later by descriptions of some of their more recent contracts.

UP to six or seven years ago the dragline excavator was comparatively unknown on the Mississippi River as a tool for levee construction. Previous to its introduction, this work was done almost exclusively by teams and convict labor. It might be well to state that in the upper reaches of the river where the slope of the bottom of the borrow pit is 1 on 50, the dragline method of operation has not been found practical, principally owing to the fact that rehandling is of course necessary. On the lower river, however, where the slope is 1 on 10 and better, it has been found that this type of operation is the most practical and the most economical yet devised.

In 1913 the Pontchatrain Levee Board awarded to Hearin & Ryan of Baton Rouge, now the Don B. Hearin & Son Co., a contract for 99 stations of levee work. Fifteen of these were for new levee and 84 for enlargement containing in all about 215,000 cubic yards. To handle this work, this company purchased a class 24 Bucyrus dragline with a 100-foot boom and a 3½ cubic yard bucket. This machine was erected at Baton Rouge in November, 1913 and moved to the work at Plaquemine Point, 22 miles

The class-24 Bucyrus dragline building a new levee. This gives a good clear idea of how the material was taken from the old levee which may be seen just to the left of the machine.

below Baton Rouge on the East bank of the Mississippi River on what it known as the Mt. Olive Levee. The machine was brought down the river on a barge as described and illustrated fully in the February, 1914 number of the Excavating Engineer.

The dragline started on the upper end of the work on December 5th, 1913 where the new levee was to be built. The specifications of this new levee called for a base of 110 feet with a height of

This view gives a clear idea of how smooth a levee could be made by the dragline with only three men, one to "flag" the load and the two others with shovels to smooth off andcarry the slopes and the crown according to specifications.

17½ feet, a 10-foot crown of 4 to 1 slope on the land side and a bachue or riverside slope of 3 to 1, with a 30-foot berm. It had been found that the riverside slope of the old levee was so short that a new levee had to be constructed some distance back. It was possible, therefore, to make use of the material in this old levee for the construction of the new one inasmuch as the dragline had sufficient digging range to make this reach. Consequently, the entire levee was built in one operation which we understand is the first time that this has been accomplished on this part of the river with a levee of this size.

The 84 stations of enlargement work consisted of placing material on the river side of the old levee and raising the levee grade about 6 feet, making a total height of about 17 feet in all. This called for a 25-foot shift of center towards the river side. The reconstructed levee had a crown of 10 feet and a bachue of 3 to 1, which were the same specifications used for the new levee previously described.

The 20 stations on the lower end of the original contract were the heaviest in yardage, running between 2300 and 2500 cubic yards per station. The tracking here was extremely bad for a heavy machine and considerable difficulty was encountered. At times it was necessary to cross extremely bad bog holes. This necessitated the digging and placing at times of 2300 cubic yards per station during the process of tracking. Logs, tree tops and willow brush were placed 5 feet high in order to hold the machine up while in operation. Considerable time was lost owing to this until the adoption of an excellent type of track section which will be described later on. It was necessary to go over these 20 stations three times, as the material was so bad that it had a tendency to slide down if too much was placed in the fill.

An extension was given on the lower end of this work, amounting to 90 stations of enlargement work or about 160,000 cubic yards of material. All this had to be placed in two operations. When the machine reached the lower end, the high water which occured during the month of May flooded all the back pits and in some places was 5 feet deep on the berm.

The two jobs above described amounting to about 375,000 cubic yards in all were completed on June 30th, 1914. From December 5th, 1913 to January 7th, 1914, the machine worked one 11-hour shift per day. From January 7th to about March 10th, two 11-hour shifts were worked, the balance of the time was single shift except for about two weeks during April when the time was doubled again. The estimates received were as follows:—

	No. of shifts	Yardage estimate	Cu. Yds. per shift
December	19	37,800	1990
January	42	87,000	2071
April	34	66,000	1942
May	19	39,000	2053

These figures were based on net paid yardage on the basis of 11 hours operation per shift with no lost time deducted such as breakdowns, delays from bad tracking, coaling, etc. When it is considered that the contractor was obliged to add 20% to the height of the levee in order to allow for shrinkage, it will readily be seen that the dragline handled considerably more dirt than the different figures show. Indeed on a new levee of the size previously mentioned, this would mean an excess of over 300 cubic yards of dirt per station.

The dragline is here shown depositing the material into the levee. Observe how few men are required on the top of the levee for trimming and sloping.

This view gives a good conception of the manner in which the platforms were placed.

The largest yardage made in two consecutive shifts was 170 lineal feet during the day shift by operator W. B. Oubre and 140 lineal feet on the night shift by J. S. Whitley, netting 5480 cubic yards. The largest yardage made in a single shift was 177 lineal feet by operator Whitley, computed at 2660 cubic yards. These figures are based on net yardage which would about equal pit measurement. The material was sandy loam. The dragline swung through an arc of from 90 to 180 degrees.

On July 1st, the contractor started to move the machine two miles up the river where work was begun on 13¾ stations of new levee and 62 stations of enlargement. Double shift was put on for both these pieces of work. It was on this move to this new job, that the sectional track designed by Mr. Whitley and described hereafter, proved its worth in easy handling and fast moving. In fact, 2600 lineal feet were made in 10 hours actual moving time with an average of 260 lineal feet per hour. This included one hour of lost time due to moving the dumping plant. Nine men were used in the pit.

The total yardage on the four pieces of work above mentioned was very close to 500,000 cubic yards and was completed by September 15th, 1914.

The material was "flagged" in by an experienced levee man, whose duty was to show the operator where to dump the load. He himself with two men with hand shovels, were sufficient to smooth if off and carry the slopes, the crown and the height according to specifications issued by the State Board of Engineers. One of our photographs shows very clearly the perfectly level crown which was the result. No instruments were used on any of this work except a 100-foot tape line. Most of the actual digging was done by W. B. Oubre of Baton Rouge and the supervision and up-keep of the machine by J. S. Whitley, who also ran the dragline on the night shift when double shift was put on.

Swinging one of the platform sections. Note the method of hitching.

After the completion of this work the dragline was moved to Lauderdale on a 160,000 cubic yard job and in June 1915 was moved to St. Patricks, La., 45 miles above New Orleans, where it handled a big job of both new levee and enlargement work. The dragline was operated on this work by W. H. Darragh and W. B. Oubre with J. S. Whitley in charge. In January, 1916, this company finished a contract at Jesuits Bend. On this work the machine succeeded in digging 103,000 cubic yards in 945 hours, placing this material in the levee. This time included moving up, coaling and all minor delays.

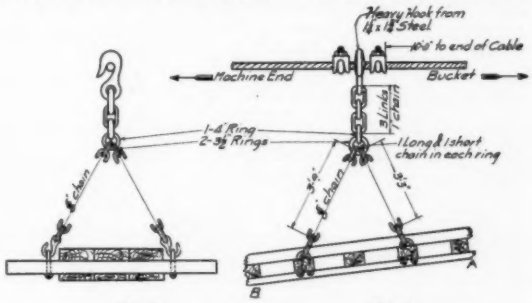


Fig. 1 Fig. 2

We mentioned above the sectional platform or track which was designed by Mr. Whitley and which proved such a distinct success. Although this was described and illustrated thoroughly in our issue of January 1915, we feel that it is well to repeat this here as it will doubtless prove of considerable interest to those interested in this class of work.

Sectional Platforms for Dragline Work

The sketches and photographs will serve to illustrate this description.

The section is twenty-four feet in length overall. Ten of these sections are used, five under each side of the machine, giving a track of about 100 feet in length.

Each section consists of three 5″x16″x20′ stringers laid side by side, thus forming a roller bed four feet wide. Under these are placed ten 6″x8″x8′ standard

railway cross-ties, spaced two feet apart, as shown in figure No. 3. Under these are three 2½"x16"x20' flooring planks, to serve as a stiffner, to elevate the roller bed and to keep the mud from forcing itself up between the ties. These three sets of timbers are bolted together by thirty ¾"x13" machine bolts with heads countersunk below the surface of the top timbers. Four one inch U-bolts in the ties serve for hooking the swinging chains.

The chief feature of the section is the staggered arrangement of the top timbers, as the sketch shows. The advantage of this is, first, to break the joint and make a more rigid connection; and secondly, to make it possible to take a sharp curve in the shortest possible space. The rollers, in so doing always have a solid bearing over the joint.

The machine can roll in either direction on these sections, but preferably in the direction of the arrow in Fig. 3. The reason is that the rollers won't strike a projecting joint, since the top timbers on the section the dragline is on, project over the ties on the section onto which it is moving and the weight of the machine serves to press it down. This is especially important on soft ground. Furthermore, it is easier to pick up and place the sections under this condition.

For very soft ground the bottom flooring may be extended to the end of the ties, thus giving more bearing surface.

An important point for the successful handling of these sections is the chain rigging for picking up and swinging. This is shown in figures 1 and 2. This consists of two pieces of ⅝" chain, 3'-9" long, and two pieces 3'-3" long. The sketches show the arrangement. It will be observed that two of these chains, towards end B in Fig. No. 2, are 6" longer than those hooked to end A. The reason for this is that in swinging, one end is higher than the other, thus making it easy to make a perfect joint.

All sections must be placed in the runway just as they came out. Under ordinary circumstances the act of swinging them from the rear to the front of the machine would set them wrong end for end. The long chains, therefore, should be given one-half twist. When the section is in the air, its own weight will naturally swing it to the correct position.

When the pit men put on the chains, the end nearest the operator should have the short chains so that after swinging around, the long chains or low end, is nearest the operator.

For ordinary service, two cable clamps are put on the dragline cable, 3 inches apart, and about 10 feet from the end. The large hook is hooked between these. In moving any distance the chains are fastened to the dragline by means of an ordinary cable clamp around the shank of the hook, (see Fig. 2) thus preventing it from coming unhooked.

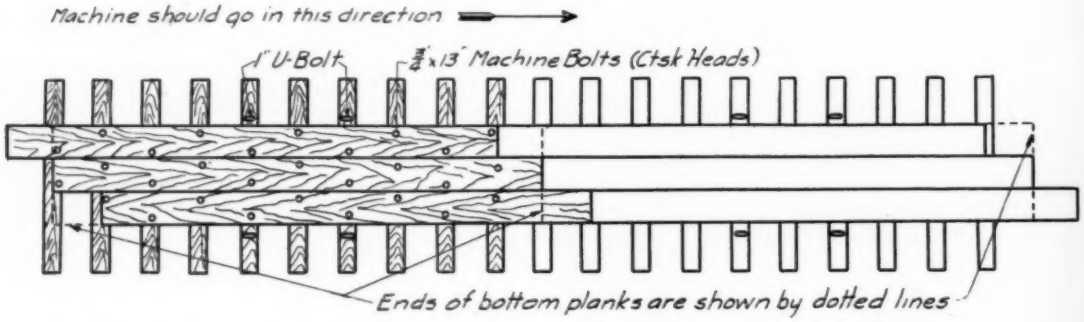
The sections, if properly managed may thus be swung ahead and placed in 1½ minutes each.

Mr. Whitley tells us that these sesections enabled him to move his machine 2600 feet in 10 hours, which is a record very hard to beat.

We are indebted to Mr. J. S. Whitley for much of the above mentioned material.

For tempering drill-steel it is good practice to have a wire netting several inches above the bottom of rhe termpering-tank. This prevents the bit, when being cooled in the bath, from standing in the accumulation of sludge in the bottom of the tank. Breakage of drill-steel used in hammer-drills is increased by continuing to use bits after they have become dull.

—*Mining and Scientific Press.*


Machine should go in this direction
1" U-Bolt
¾"x13" Machine Bolts (Ctsk Heads)
Ends of bottom planks are shown by dotted lines

Top Timbers 5"x16"x20'-0" Heart Pine
Bottom Timbers 2½"x16"x20'-0" Heart Pine
Cross Ties 6"x8"x8'-0"-Std. R.R. Ties

Fig. 3

The Alaskan Railroad Now Under Construction by the United States Government

BY L. T. RUSSELL

WORK is now under way to build a very extensive system of railroads in Alaska and good progress is being made, especially in the vicinity of Anchorage and Seward.

Anchorage Division

This division is in charge of Leiut. Frederick Mears, member of the Railway Commission, and consists of the new line from Mile 71 at the head of Turnagain Arm to Anchorage, from Anchorage to Mile 148 at Matanuska Junction, from Matanuska Junction thirty-five miles to the coal fields, and also from Matanuska Junction north to Chulitna Pass at approximately Mile 271 starting from Seward.

The railroad is now completed from Anchorage to Peters Creek, about Mile 135, and is being rapidly extended northward toward the Talkeetna mining district, also to the Matanuska Coal fields. This last section of road is to be finished the present season in order to get coal supplies for fuel purposes on the road. As soon as the railroad reaches the Talkeetna mining district, which should be some time during 1917, a rapid development in placer dredging as well as copper mining is looked for as the district is rich in minerals and great activity will follow as soon as cheap transportation is available.

The construction work on the Anchorage division is divided into districts under direct supervision of District Engineers and Superintendents of Construction. The work being carried on from Anchorage is under Mr. Warren, District Engineer assisted by Mr. E. C. Jones, Superintendent, and Mr. Emil Hedberg, Master Mechanic.

Eagle River bridge between Matanuska and Anchorage

The Talkeetna District is under Mr. K. Kuney, District Engineer, assisted by Mr. James O'Reilly, Superintendent, and the Turnagain Arm District is under Mr. Breck, assisted by Mr. F. A. Hanson.

Fairbanks Division

This division is in charge of Mr. Thomas Riggs, Commissioner, and extends from Fairbanks south to Chulitna Pass connecting with the extension from Anchorage at Mile 271. Active work com-

menced this season and good results are expected. Fairbanks will be used as a base of operations and camps established along the line of the survey as fast as possible. Mr. Riggs, is assisted in his work by Mr. F. H. Bailey, Assistant Engineer, Mr. W. A. Defoe, and a number of additional employees. A very considerable difficulty that is not met on other divisions, is encountered on the Fairbanks division. It is the problem of transportation, as all heavy equipment and the bulk of other supplies must come via St. Michaels and the Yukon River, which is open about four months in the year. Freight can also be brought in by way of Skagway and the White Pass and Yukon Railway and then down the river, but the rates are much higher than by way of St. Michaels. The completion of the Alaskan Railroad from Seward to Anchorage and to Fairbanks will give a badly needed and cheaper system of freight transportation to operators in the districts traversed by the lines now building.

Seward Division

This division is under Mr. W. C. Edes, Chairman of the Commission, with headquarters at Seward, although Mr. Edes, at the time of my visit, was in Washington, D. C., on business connected with the Alaskan Railroads. During his absence Mr. R. J. Weir, is Engineer in charge, with Capt. T. M. Ward, Assistant Engineer, and Mr. C. R. Buchnell, Master Mechanic.

The work on the Seward Division at this time, consists of rebuilding bridges, line changes and grade betterments of the Alaska Northern, which was acquired by purchase, as well as lay ng new steel and overhauling rolling stock.

Laying Steel five miles from Anchorage, November, 1915

In General

Anchorage is being used for a base of supplies for construction work in both directions. Large store houses have been built, equipment has been ordered for large machine shops and coal bunkers are to be built for future use. The town is well laid out and a busy place. One of the greatest difficulties to be met in handling freight is the great range of tides, being thirty feet and sometimes higher a considerable part of the time. It is hoped that a basin and docks may be built later on that will remove a great deal of the present inconvenience.

Bucyrus Shovel Number 681 straightening curves near Anchorage

There is one shovel working near Anchorage, a 70-ton Bucyrus No. 681, which was shipped from Panama. This machine is digging ballast for the line now built, also making some line changes, using the excavated material for ballast, as practically the entire country through which the first thirty-five miles has been built is glacial gravel. Two or possibly three more shovels are to be used at Anchorage, which will give this division a total of four shovels. The Commission took over from The Dalles Celilo Canal, two 60-ton and one 40-ton shovels. The two 60-ton shovels and one which is expected from Panama will be placed on the work along Turnagain Arm, while the 40-ton machine will probably go to the Seward division to assist the Bucyrus 45-ton shovel now working near Seward on the line changes.

The Commission has recently added to their equipment a Bucyrus Locomotive Pile Driver, as they have many pile trestles and bridges on which this machine may be used.

It is the intention of the Commission to have the greater part of the present plans completed by the close of the working season of 1917, and with the exception of the rock work on Turnagain Arm, practically all of the excavation on the Anchorage Division will be let to station men in small quantities, the average station crew being from five to fifteen men.

The writer wishes to express his appreciation of the many courtesies shown him at Anchorage and Seward by the heads of Divisions, as well as other employees, all of which made the trip one long to be remembered.

Swamp Ditching

By F. W. Wilson

The Southern Drainage & Construction Company of Kinston, North Carolina were stuck; literally stuck in the mud. They are engineers and contractors engaged in the development of swamp and overflowed land.

They caught a tartar in a drainage proposition they tackled near Wilmington, N. C. recently. Fig. No. 1 shown herewith will give a general idea of the tangle of underbrush and stumps through which they required a ditch approximately twelve feet wide at the top, five feet deep and twelve hundred feet long. The soil a heavy, wet muck. Do you wonder they were stumped?

But not for long. President Hodges of the Company reads the engineering papers and keeps posted on new machinery, new methods and new ideas generally applicable in his contracting business. He had read that ditches could be blasted with dynamite under the conditions that confronted him.

As he had no men in his employ that had had experience in ditching with dynamite he told his troubles by mail to a powder manufacturer, and a emonstrator was dispoatched post haste to solved the problem.

Figure 1

Figure 2

Fig. 2 indicates the success he met with and shows a section of the ditch before the water was turned in.

The ditch was "shot" in sections by a method technically known as a propagated blast. To explain what that means: A single row of holes were punched in the mud, spaced about twenty inches apart and three feet deep. Each hole was loaded with two sticks of 40% Gelatin and one stick of 60% straight dynamite. That is about 1½ pounds to the hole. A length of fuse and a blasting cap were included in the charge in the middle hole of each section, but no detonators were used in any of the other holes. The charges down the line, extending in both directions from the middle hole were discharged by shock, carrying from hole to hole. That is what is meant by progagated blasting. It is a method that can be employed only when at least part of the charge in each hole is of "straight" dynamite, and only when the soil is dense and saturated.

Under any other conditions ditch blasting requires an electric blasting cap in every hole with the dynamite and the charges must be fired with a blasting machine. However, when the blasting is done in this way a cheaper grade of dynamite can be used and the bore holes can be spaced further apart, so that the increased cost of detonators is counterbalanced by decreased cost of dynamite.

This ditch at Wilmington was about twelve feet wide at the top and five to seven feet deep. It cost approximately twenty-six cents per running yard. It was estimated that to dig a similar ditch by any other method would have cost about fifty cents per yard.

It would seem as if contractors engaged in land development work might find this method an advantageous one to know about.

UMI

The Excavating Engineer

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THE EXCAVATING ENGINEER PUBLISHING CO.

Bradlee Van Brunt, Manager and Editor

367 National Avenue Milwaukee, Wis., U. S. A.

Construction Outlook

There is very little change to be expected in the railroad construction situation this month and we have heard of no new work of large size coming up in the near future. It is very evident that many improvements on main line and terminals, as well as new construction, are badly needed but the railroads, no doubt, prefer to wait until labor conditions and prices of material become normal.

Road building in nearly all parts of the country is progressing satisfactorily and new projects are reported almost daily. Last month the President signed the Federal Aid Bill which becomes effective immediately. According to the terms of the bill $75,000,000, to be expended within the next five years, is appropriated for road building in the various states. Of this total $5,000,000 is available for the fiscal year ending June 30, 1917. When it is considered that this amount is a very small percentage (some authorities estimate 2%) of the total that will be spent during the fiscal year by the states, the activity in this field becomes apparent. $10,000,000 is also appropriated for road and trail development in the national forests.

Reports on municipal work, such as sewers, water works and paving are very encouraging and several important projects will undoubtedly come up in the near future.

Caterpillar Revolving Steam Shovel for Street Grading

The City of Flint, Michigan has, for the past several years, been carrying on its own construction work instead of letting it out by contract. A great deal of work, consisting of street grading and sewer building, is in progress at the present time and about 9½ miles of asphalt pavement will be laid this year.

Two small revolving steam shovels are used for excavating the streets. One of these machines, illustrated on another page, is interesting, as it is mounted on caterpillar traction and is very efficient in the shallow cutting which runs from 12 to 18 inches.

This type of traction enables the shovel to travel over ordinary paved streets without planking, and also to operate in the pit without planking or platforms of any description. Consequently, a great deal of time is saved in moving up. This saving amounts to considerable in the course of a day's operation, especially in the shallow cutting where moves are frequent. At street untersections where the cut is usually wider, the saving is particularly noticeable. One caterpillar drive is thrown out and the shovel makes a right angle turn. It digs out one intersection, then backs over to the other and digs it out. It makes another right angle turn in the opposite direction and is then in its original position. No time is lost, as only a second or two is required to throw the caterpillar drive out or in, and there is no delay for planking or platforms or for manoeuvring back and forth to make the turns.

The machine is loading into 1½ cubic yard wagons. 300 wagons per 10-hour day is about the average, although eight 1½ yard wagons were loaded, and the shovel moved up twice in seven minutes. The bucket is of 2-3 cubic yard capacity and three bucketsfull are put in each wagon.

The work is under the supervision of Mr. Ezra Shoecraft, city engineer. Ernest McDonell is the engineer and Benj. McDowell, foreman. Good progress is reported on all the city work.

A Toast to the Contractor

He deserves a double toast—one for his burdens, the other for his mission and the larger meaning of his work.

He is the peg on which every one connected with a building enterprise wants to hang his troubles—and his delinquencies.

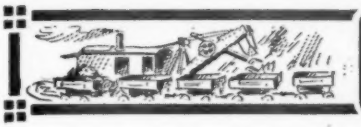
He is the wizard whose reading of plans and specifications must be free from error, even if *they* are not.

He is the wizard who must be able to foresee unforseen circumstances, who must prevent unpreventable interference with his job.

He is the wizard who must put up his plants in a temporary location with all the efficiency of a permanent establishment.

His mission is to do "real constructive work." It is symbolical of the right kind of enterprise and activity. It is the contractor who turns projects into realities. He stands for the "realization" of things planned, which is the essence of all achievement.

Here's to the contractor, the man who literally build up the country!—*Knickerbocker Komments.*



· FIELD NOTES ·

QUESTIONS pertaining to the operation, maintenance or repair of excavating machinery will be answered through this column. Address, Field Note Department, Excavating Engineer, P. O. Box 607, Milwaukee, Wisconsin.

A Steam Shovel Report Form

We publish herewith a fac-simile of a steam shovel daily time and supply report which we consider a very good example. This is the type of report used by the Fred R. Jones Company on their steam shovel and dragline excavation work. Another form, somewhat similar, is used for other classes of work, which they have under contract.

This report is made out by the field office the first thing each morning, following the previous days report. One copy is retained for the field file and the other is sent in to the main office. It will be observed that the total day's expense as well as the total labor expense to date, is carried forward and included with the total supply and other miscellaneous expense items to give the grand total expense on the part of the sheet marked with a X. The contractors advise that they are enabled by these reports to keep a very close watch on the daily output and are enabled to tell each day, just how the contract stands each month.

Form 6

The* FRED R. JONES CO., *(Inc.)

STEAM SHOVEL DAILY TIME AND SUPPLY REPORT

Contract Shovel No.

Shift

191

Occupation	No.	Hours	Rate	Amount	Material and Operating Supplies	Amount	Freight or Express	Total Amount	Work Done
Superintendent,					Coal,				C. Yds. Earth Moved,
"					Hardware,				" Previous,
Engineer,					Oils,				Grand Total,
					Explosives,				
					Lumber,				
E. S. Engineers,					Track Materials,				
"					Grain,				
Loco. Engineers,					Hay,				C. Yds. Rock Moved,
"									" Previous,
Hoister Engineer,									Grand Total,
Cranemen,					Day's Expense,				
"					Previous "				
Firemen,					Total,				
"					Outside Expense			Amount	
Watchmen,					Shop and Yard Office Expense				No. Cars this day,
Water Boys,					Track Laborers' Supplies				" Previous,
Brakemen,					Rentals				Grand Total,
Conductors,					Auto Expense				
Carpenters,					Depreciation				
"									
Blacksmiths,									
"					Day's Expense,				No. Feet Track Laid,
Blacksmith Helpers,					Previous,				" Previous,
					Totals,				Grand Total,
					Total Expense,				
					For Day	X			
					Previous,				
					Grand Total,				
					FIREMEN'S TIME, DAY'S EXPENSE.				
Drillers,					Superintendent,				No. of Trains this day,
Powder Men,					E. S. Engineer,				Length of Haul,
Time Keepers,					Trainmen,				Yards per Car,
"					Dump,				Shovel at Station,
Pump Men,					Trestle,				Track at Station,
Teams,					Track,				Ft. Track Rel. this day,
Stn. Horses & Carts,					Drilling,				
Laborers,					Blasting,				Approved,
"					Grading,				
					Ditching,				
Day's Expense,					Repairs,				Manager.
Previous,									Supt.
Total,					Total,				Time Keeper.

Safety First on Steam Shovel Work

By Grif Hughes, Chief Shovel Man, Philadelphia & Reading Coal & Iron Company.

While there are safety devices on almost every machine that has elements of a dangerous nature, it seems to me that the more you talk to some fellows to prove this point, the worse nature seems to act, especially with shovel men.

Shut Off Steam Before Doing Work on Boom

For instance, we had a cranesman on one of the Bucyrus 70-ton shovels who went up on the boom to tighten the U-bolt on the saddle block. While he was pulling the wrench, it slipped from the nut. He naturally lost his balance and fell over, his foot coming in contact with the thrust lever on the boom engine, allowing the steam to be turned on the boom engine. They went off like a shot. He had hold of the large gear to save himself from falling to the ground and before he had time to think, his hand was caught between the gear and pinion. The eventual result of this was amputation, leaving this man a cripple for life. Now while this is only one instance, this shovel man as well as many others, had been told when going up on the boom to do work on the boom engine, that he should shut the steam off in order to avoid accidents.

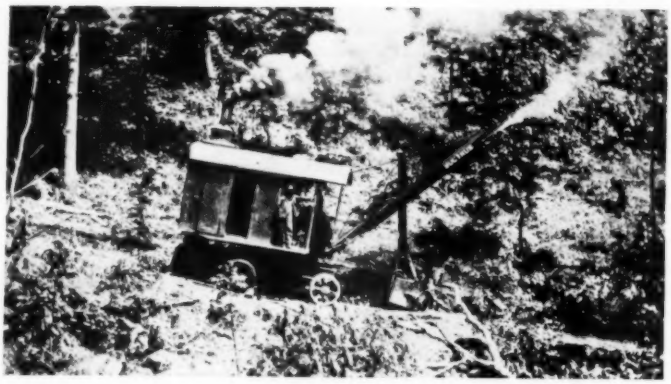
Shut Off Steam Before Doing Work on any Part of Machinery

No man has any business doing any work on any part of the shovel while the steam is on. If you were working on your swinging or hoisting engine, some person might come in on the front of the shovel and unintentionally may walk among the levers. His shoulder might open the throttle. You of course would be in a stooped position, not noticing what was going on. An injury under these circumstances is almost certain.

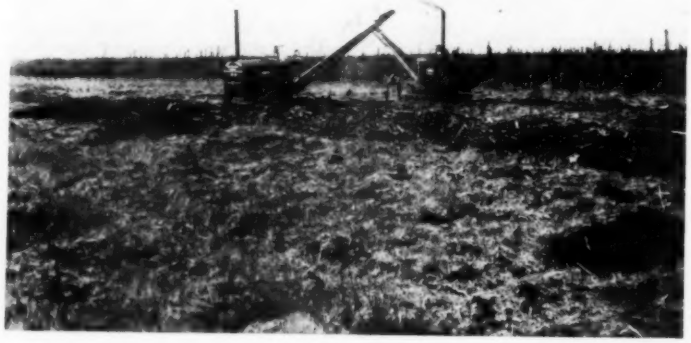
Changing Dipper Teeth

Here is another thought. Some shovel men have a habit of changing dipper teeth with the dipper handle suspended. This is a very dangerous practice. A man may be standing under or in front of the dipper which is hanging in the air. Suppose the steam got low in the boiler and the boom engine started to move. Do you think this man could get away in time to prevent a serious and perhaps fatal accident? I don't. To change dipper teeth, the dipper should be set on a small bank or loading track. If you have no bank or loading track available, it should be set on some blocking. When the rivets are cut or the bolts taken out, raise the dipper and the teeth will very likely fall off with very little resistance. If a man is

(Continued on Page 432)



Taking a 14-B Revolving Traction Shovel through the mountains in North Carolina.
Wright-Johnstone Contracting Co., Topton, N. C.



Two Class-7 Draglines on the Winipeg Aqueduct.

Class 24 Elecrtric Dagline on the Little River Dra
The machine is digging quick sand. Th
seen from the way it ran on
struction Company, Cape

Drainage Project, Cape Girardeau, Missouri.
The character of the material may be
on the dump. Floesch Con-
pe Girardeau, Missouri.

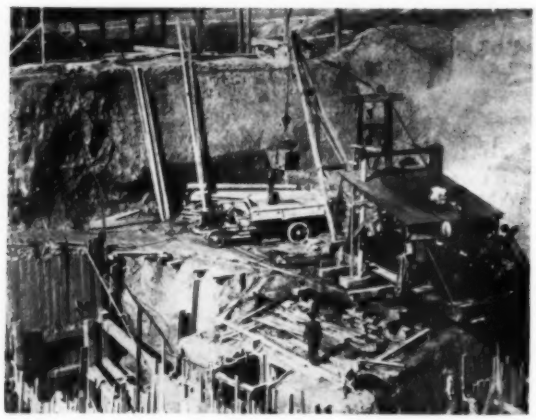
Class 14 Dragline starting operations for the Duquesne Contracting Company, Pittsburgh, Penn.

Bucyrus 35-B Revolving Shovel digging a roadway to the pit, Hanna Mine, Consumers Ore Co., Mountain Iron, Minn.

DEVICES YOU OUGHT TO KNOW ABOUT

The Twin Peaks Tunnel and the Motor Truck

One of the greatest engineering projects that has ever been attempted on the Pacific Coast is the building of the Twin Peaks Tunnel at San Francisco, California. The tunnel begins at the end of Market Street and runs directly through the Twin Peaks, a distance of two and one half miles. When completed it will open up for settlement some of the city's most beautiful territory and will be the main artery of travel between the city and the comparatively level land to the south.



Before the advent of motor trucks the cost would have been prohibitive, but the contractors who tackled this gigantic task knew the possibilities of the trucks and purchased them in large fleets before starting the work. The big bore has an arched roof extending fifteen feet above a thirty foot floor and when completed will give the city many new benefits.

The White trucks, shown in the accompanying photographs, are only two of the large fleets of these power vehicles operated by the various contractors who are handling different sections of the tunnel. These trucks have played an important part in the work. Their ability to turn within the narrow confines of the tunnel, the rapidity with which they receive and dump their loads, and the short space of time it requires for them to deliver their five-tons load or rock and earth have saved large sums of money for the contractors and greatly speeded up the completion of the project.

TRADE NOTES

The American Manganese Steel Company of Chicago, have purchased the plant of the Brylgon Steel Casting Company of New Castle, Delaware. This purchase was made necessary in order to provide increased manufacturing facilities for their growing business. The plant just purchased is an up-to-date steel foundry having a monthly capacity of approximately 400 tons of steel castings. This enlargement makes the American Manganese Steel Company the largest producer of manganese steel castings in the world. They have two plants at New Castle, and one at Chicago Heights, Illinois. The new plant will be converted into a manganese steel foundry.

The Hayden-Corbett Chain Company at Columbus, Ohio, still report a heavy demand for their "Old Reliable XX" dredge quality steam shovel hoisting chains, and they continue to advise their customers to avoid disappointment in regard to delivery by anticipating their wants as much as possible.

The T. L. Smith Company, Milwaukee, announce that they have opened new quarters in charge of Mr. E. R. Marker, district manager, at 609 Wells Street, Milwaukee. Mr. Marker will have charge of the Wisconsin business of the company and will carry a stock of mixers as well as a complete line of contractors' supplies.

The Hayden-Corbett Chain Company of Columbus, Ohio, advise that they have made a number of large sales, also a very large number of smaller ones during the past month, especially as regards steam shovel hoisting chains and stud link ship cable chain. The business which they received during the past month has been very gratifying. They suggest to their steam shovel friends, that they place their orders as far in advance of their requirements as possible, and to state on the order when they desire shipment made. This will then enable them to make up the chains and hold them in reserve for their customers, thereby cutting down disappointment to a minimum, as regards deliveries of hoisting chains.

The Walter A. Zelnicker Supply Co., St. Louis, announc a Boiler Bargain in Bulletin No. 201.

SHOTS FROM THE · FIRING LINE ·

Alabama

George Stanberry, erecting engineer for the Bucyrus Company, has a farm near Marion Junction and lost nearly everything but the real estate in the recent storm which swept that district. George takes his loss good naturedly, however, and tells the following story. "A darkey was sent in a boat by the relief committee to rescue a family of colored people, about a mile out in the flood. The darkey returned with a load of watermellons. When asked about the family he replied that he would get them on the next trip."

W. R. Boblitt is operating a 35-B Bucyrus revolving shovel for the Sunlight Mining Company at Jasper. C. J. Hager is superintendent. This company has also a 225-B Bucyrus in operation. The 35-B is digging coal behind the big machine which is stripping overburden.

George Stanberry is erecting a 175-B Bucyrus revolving shovel for the Alabama Fuel & Iron Company, Russellville.

Arizona

Contract for the construction of a sewer system at Tucson has been awarded to T. J. Shea, 1800 Oxford St., Los Angeles.

California

U. S. War Department has ordered an investigation of the feasibility of constructing a $40,000,000 bridge over San Francisco Bay to connect the cities of San Francisco, Oakland, Berkeley and Alameda.

Conner Construction Co., 709 Higgins Bldg., Los Angeles, Cal., awarded contract under bids opened June 27, for 8.57 miles of concrete pavement for county.

Property owners in Carmichael Colonies, Nos. 1 and 2, have voted $90,000 bonds for a Wright irrigation district. It is expected a pumping plant will be installed at once.

Canada

St. Catharines and Vicinity

By J. G. Beck

The good roads movement in Essex County is to be pushed along as quickly as possible. W. H. Huber, C. E., engineer for the Ontario Highways Department, visited Sandwich recently for the purpose of meeting the Special Good Roads Committee of the Essex County Council and going over the roads laid out in the county scheme, and to estimate the cost and give the committee the details necessary for the by-law.

Weather conditions this spring have greatly interfered with the completion of the Toronto-Hamilton Highway. Four machines are at work, however, and four miles of new concrete have already been laid at Lorne Park, Port Credit, Oakwood and Burlington. The commission expect to complete the system before August 31.

Plans are in progress for a good roads scheme involving a sum of about $100,000.00. County will do the work, the road commissioner, Mr. Wm. Watters, of Lanark, supervising. A steam roller and some other road machinery will probably be required.

Montreal and Vicinity

By B. St. John

Cavicchi & Pagano have secured a sub-contract on the St. John Valley Railway and are busy moving their plant from Cape Rouge, Quebec, to the new work. Mr. Cavicchi was in Montreal a few days ago and states that while this job is not a large one, it will keep his organization together until something better turns up.

The Cook Construction Company, Limited have commenced work on their aqueduct contract here, after a long delay. They are experiencing considerable difficulty in securing labor. Several hundred men could find employment with the above concern.

The Canadian Government Railways have purchased all of the equipment belonging to M. J. O'Brien and associated Companies, which has been stored along the lines of the Transcontinental since it was completed.

The Canadian Pacific Railway is ballasting all their track in the vicinity of Montreal with crushed stone. This is a very welcome improvement, as it will do away with a large amount of the dust and make traveling pleasanter.

The Canadian Pacific Railway is successfully operating a ditching machine in connection with Western 12-yard air dump cars. We understand that this arrangement is much more efficient and less costly than the old method of using flat cars.

L. A. Ott & Company, have about completed the Quebec Battlefields Contract and will soon have an outfit available for any kind of construction work that may come up.

Contractors on the St. John Valley Railway are taking advantage of the good weather and are busy getting their equipment on to the work. Most of this equipment has to be taken in on barges, and must be done when the water is high, therefore the large rainfall of this spring has been of some benefit.

Contractors on the Welland Ship Canal are badly handicapped on account of the scarcity of labor, both common and skilled. Any person that can handle a pick and shovel or a hammer and cold chisel can secure employment on this work at good wages.

Vancouver and Vicinity

By A. G. Brown

The contract for the construction of the Canadian Northern Depot has just been let to the Northern Construction Co. and Carter Halls & Aldinger. It is reported the contract price is $575,000. This firm also has a large contract on the Winnipeg Acqueduct. Preparations are being made for an immediate start on the foundations.

The Pacific Great Eastern Railway Company plans to at once resume construction on its line north of Clinton, the present railhead. Employment will be given to between twelve and fifteen hundred men. The company intends to rush construction so that the line will be completed to Fort George by next spring if possible. The greater part of the grading has been done. A 24-mile section near Horse Lake Summit only remains to be finished. Rails will have to be laid on 263½ miles, that being the distance from Clinton to Fort George. A bill has been introduced in the Provincial Legislature providing for a loan of $6,000,000 to aid the Pacific Great Eastern for the completion of its line through to Fort George.

Mr. T. H. White, chief engineer of the Canadian Northern Pacific Railway Company, Vancouver, states that work will begin on the construction of the line between Kamloops and Kelowna within six weeks or two months. Grading operations will commence about the middle of July. The new line, including branch trackage, will comprise 140 miles of railway. It will start at Kamloops and run to Vernon, via Armstrong, and through to Kelowna. A branch line will run from Vernon to Lumley.

UMI

The Tonopah-Belmont Development Co. is constructing a dam at the Surf Inlet mine on Princess Royal Island. This dam will supply power to develop 1,500 horsepower, and as soon as this power is available the installation of the first unit of the mill and mining plant will be pushed forward. It is proposed to construct an electric railway to connect the mine with the head of navigation, so that the machinery can be placed on the ground. A transmission line to convey power from the new power plant to the mine will have a length of seven miles.

Continued steady progress upon the Canadian Northern Pacific Railway Company's line, from Patricia Bay to the terminals on the former Songhees Indian Reserve is being made. Ballasting on the line between the city and Patricia Bay is being pushed ahead with rapidity, and the work will be completed in about six weeks' time. The contract for the reinforced concrete arch over the proposed subway across Burnside Road has been let to Messrs. Robertson & Co., of Vancouver, and work thereon will commence at once. A start upon the construction of the ferry transfer slip at the Patricia Bay terminus will be made within a very few days. This slip, which will accommodate the new ferries which the company will operate from that point to the mainland at Port Mann will be 308 feet in length, with a breadth of 27 feet, and much piling will be required in the construction of the slip. Good progress is also being made on the work of filling in on the trestle across the Upper Arm, over which the line will run from the Gorge Road ravine to the former Indian Reserve. By the time it is finished, work on the construction of the concrete piers to carry the permanent steel lift span, 70 feet in length, will have begun.

The British Columbia Electric Railway Company, are proceeding with the completion of a large sub-station in Burnaby, B. C., the work on which has been suspended for the past two years.

Great Northern Railway awarded contract for completing line between Kilgard and Sumas, B. C. to A. Guthrie & Co., St. Paul, Minn.

A bill to grant to the Dominion Government the strip of land necessary for the construction of the Banff-Windemere highway was passed recently by the legislature of the Province of British Columbia. This road will be about 40 miles long and will cost about $200,000. The Dominion Government have agreed to complete and maintain the road.

An announcement was recently made at the office of general superintendent J. M. Cameron, of the Canadian Pacific Railway, that the work of finishing the gap in the Lethbridge-Weyburn line would be started at once. It is understood that this stretch will be completed in time to permit the handling of this year's crop. Three hundred miles already have been built from the east end and about 60 miles from the west end. This connection will give the C. P. R. another direct line from Weyburn to the Crow's Nest Pass and thence through to the coast via the Kettle Valley Railway and main line. It is regarded as being something of the equivalent of double tracking the main line.

Contract awarded by J. D. McArthur to McPherson & Quigley, Adams Block, Edmonton, for the construction of 54 miles of road from Spirit River to the British Columbia boundary for the Edmonton, Dunvegan and British Columbia Railway.

In order to open up homestead territory the Canadian Northern Railway Company is building 100 miles of new line from Oliver, which is located seven miles east of Edmonton on the main line, to St. Paul de Metis.

A scheme is on foot to construct an international highway along boundary line between the United States and Canada, to be named the "Peace Highway," in celebration of the 100 years without war between the two countries. The question was first taken up by the council of Matsqui, B. C., and the commissioners of Whatcom County, Wash., and it is now proposed to bring it before the Dominion Government and the United States Congress. The Whatcom County commissioners have already outlined a highway from the salt waters of Blaine and White Rock to the mountains near Sumas and Huntington, as the first unit of what eventually it is hoped will be a paved highway from the Pacific to the Atlantic along the boundary, connected with the Pacific Highway from Blaine to California, and the Inter-provincial highway from Vancouver to Chilliwack.

The British Columbia Government has guaranteed $40,000 bonds of French's Complex Ore Reduction Company. The company has leased the Canada Zinc Company's plant and machinery at Fairview, B. C., to develop and commerically demonstrate a new process for the treatment of complex ores.

J. W. B. Blackman, city engineer of New Westminster, B. C., has been awarded first prize by the Institute of Municipal and County Engineers for an article on the construction of the 25-inch water main which supplies water to New Westminster, and of the 13-inch submerged main leading to Richmond.

The city waterworks installation at Port Moody, B. C., is progressing very satisfactorily. The dam at Noon Creek is practically completed; the pipe is laid for a mile down to the steel works and the water will be turned on to that industry immediately.

The first steel rolling mill in the Province of British Columbia recently started operations at Port Moody, B. C. The mill when completed will be in two units, but only one of them has peen erected at yet. The new concern is under the presidency of Mr. E. Francis.

T. C. Duncan, E. E., for many years electrical superintendent of the public utilities of the city of Prince Rupert, B. C., has resigned that position to engage in private consulting work in the same city.

The Canada Copper Corporation, which is the holding company for the British Columbia Copper Co., has important plans for the equipment of the Princess Alice camp on Copper Mountain, and its addition to the copper producers of the province. The plans provide for an outlay of $2,500,000 on the erection of a mill, and the installation of transportation and mining equipment. A working tunnel will be driven to open up the ore deposits for the economic extraction of the ore, and this will be connected with the surface by the shaft which is being deepened to the tunnel level. This tunnel will be 2,000 feet in length. The work will be completed by fall, and $400,000 has been set aside to cover the cost.

The Granby Consolidated Mining & Smelting Co. will install a steam power plant at the Anyox smelter to be used as an auxiliary during the winter.

Colorado

Denver and Vicinity

By H. N. Steinbarger

One of the big Good Roads Meeting of the country occured on the 24th and 25th of last month. It was held at the Canon Hotel in Yellowstone Park. The object of the meeting was to perfect an organization and permit construction of roads of the best type that will connect all of the national parks in the Rocky Mountain region and along the Pacific Coast. It was proposed to build one great big fine roadway that will traverse the States of Colorado, Wyoming, Montana, Idaho, Washington, Oregon, California, Arizona, and New Mexico. One county commissioner at least from every county through which the highway will pass, was in attendance, in addition to good road enthusiasts from every section of the Rocky Mountain region. The organization was thoroughly perfected and it is expected to secure the cooperation of every county and state through which the road will pass, and the Federal Government. Full information as to the meeting could not be obtained in time before this issue went to press. It is hoped however that the proposition will to through quickly and this wonderful highway constructed in the near future.

The Yellowstone Highway is the first link in this park to park highway which will be 3500 miles in length when established and in operation. The various counties along the line have done wonderful work during the past year. The idea of the Yellowstone part was originated several years ago, at a meeting called by the Douglas Wyoming good roads association. An association was formed in 1915 and every member has been working like a Trojan since that time. With this association and a number of others, there is no doubt that all have joined forces so that the complete 3500 mile circle road will be completed and in successful operation in the near future. When complete the circle trip will pass through some very attractive scenic places. The National parks to be connected are the Rocky Mountain, Yellowstone, Glacier, Ranier, Crater Lake, Yosemite, Sequoia, General Grant, and Mesa Verde. The Grand Canon of the Colorado in Arizona will also be in the circle. It is also proposed to include Mount Lasse, San Juan, and City of Denver Mountain Parks. The park to park highway will also connect with the Lincoln highway near Cheyenne and with the Ocean to Ocean Highway at Colorado Springs, Colorado, thus trans-continental motorists can leave the direct east and west route and swing around the circle in either direction.

A report just filed with the State Highway Commission of Colorado by U. S. engineer furnished by the Department of the interior states that a survey has definitely determined that 16 miles of highway running from the end of the new Estes Park Road recently completed to the Grand River Road will complete what is known as the Fall River Road through the great and new Rocky Mountain National Park. Plats and files are being prepared and will be furnished the highway commissioner in the near future. It is estimated that the cost of completing the road will be about $60,000. The Fall River Road is considered one of the most important connecting links in the Colorado State Highway system. When complete it will open a country with unusual scenic attractions and will undouptedly draw a heavy tourist traffic to the new park. It also when complete will be another new link in the park to park system.

It is proposed by the Omaha-Denver-Lincoln good roads association to greatly shorten the road between these cities, by a cut-off of about 25 miles. The present route is by way of Greeley, Colorado, 644 miles long. If the plan goes through Sterling and Greeley, Colo. will be left by the wayside, and the distance will be practically the same as between Omaha and Denver by way of the Lincoln Highway. Most of the counties along the route are apparently in favor of the cut-off although there is, naturally, a great objection on the part of Greeley and Sterling residents.

The Denver Motor Club has been doing most excellent work in the placing of sign boards on the various roads throughout the country. Several hundred additional signs are in readiness to be placed on what is known as the Parker-Elizabeth road. Last month about 150 good roads enthusiasts from Elbert County ran to Denver over what is at the present time rather a poor road. It is agreed that this road shall be placed in splendid condition in the very near future. On September will convene in Denver the Annual Meeting of the National Midland Trail Association. The convention was obtained largely through the influence of the Denver Motor Club, being of importance because of the fact that the Midland Trail is the only transcontinental highway which gives recognition to all of Colorado. Splendid attendance is anticipated as a great deal of interest has been aroused in this transcontinental line.

Before this issue has gone to press it is believe that there will have been subscribed by Denver Capital a total of $3,000,000 which is asked by the Denver & Salt Lake Railroad "Moffat Road" $3,000,000 in eastern capital has already been subscribed and all for the purpose of boring what is to be known as the Moffat Tunnel under James Peak in Colorado. With this tunnel in use the Moffat Road will undoubtedly greatly enhance its value because of tremendous grades which now must be overcome and the fact that there is now several passes through which the present line goes which are at times impassible on account of the deep snow falls. In this connection it is interesting to know that Andrew N. Rogers, a noted engineer of 50 years ago, surveyed the present line of the Moffat Road and it was suggested as a part of the proposed Union Pacific Line then being built. The Union Pacific finally decided upon the present route which covers a greater distance than it had gone through the mountains near Denver. It is expected that contracts will be let for this tunnel in the near future.

The "Judge" has been to Denver,—the first time since starting the Union Pacific second track work in Echo Canon, Utah. He had to come in to see if we were all behaving properly. There are several of the bunch that escaped his clutch and therefore no fines are being paid. The "Judge" slipped in very quietly stayed three or four days, and went on out to the scene of his latest endeavors. We understand that he has everybody walking a chalk line. This is not very hard to do even though they are all encamped out in Utah, an open state. They hung around Colorado so long that they sort of got the habit of being dry and have stayed dry.

Hermann Hasselman of the firm of Hasselman & Clark, Pueblo passed through Denver late last month on his way to Colorado Springs and vicinity to bid on some bridge work. We haven't heard how he came out, but we certainly wish him success. Clark & Hassleman are certainly making great headway on the North Sterling Irrigation job.

Frank Hoffman was in town. He came a little later than the "Judge" so he could stay a little longer as he wanted to slip around here and there and see some of the old "Pitchers." We understand that he cleaned up Jim Davies, and when Jim is concerned this is some job.

There is still a scarcity of labor around this territory and it looks as if there is going to be a greater scarcity, as farmers around here are offering the best attractions to harvest hands that have been offered for some time. We certainly hope to see more jobs going so there will be a still greater scarcity.

Charlie Dooling slipped off from his camp not so long ago and went back to his old hold in Salt Lake City. After an absence of about three years it certainly looked good to him and we are advised that he saw everything going or coming. Just tickled to death with the "going!" We don't anticipate there will be any more trips to Salt Lake and vicinlty until Dooling Brothers move their camp from Castle Rock.

The H. Koppers Co., of Pittsburgh, Pa., recently secured a large contract at Pueblo, Colo. on by-products plant of the Colorado Fuel & Iron Co., and their engineer is now on the ground arranging for the equipment to be shipped from their Pittsburgh works. They expect to be on this work for some time to come.

Axton and Spratlin are now making great headway in Pueblo on the big asphalt paving job. They are now using the 7-ton capacity Sterling truck with dump and spreading body. It is the biggest thing out in the Colorado district, and is certainly creating a lot of interest amongst the municipal contractors. They will follow up the grading with an Austin Special concrete paving machine for laying the foundation for the asphalt top foundation. It is anticipated that this work will be far enough along within the next two or three weeks to permit of moving the Sterling truck to Denver for serving the North Denver Paving District equipment.

Richard Cole is operating a new 70-C Bucyrus shovel for Sprague, Nisely & Purdy on their Union Pacific contract under Kilpatrick Bros. & Collins at Castle Rock, Utah.

Foreign

Claude Chezum and Gilbert LaMair left last month for Russia where they will erect a number of large machines for the Russian Government. Mr. Chezum will erect two Bucyrus 25-B electric revolving shovels and two Bucyrus class-14 electric draglines which will be used on a large irrigation project in the valley of the river Tchou, Turkestan.

Mr. LaMair will erect four 68-C Bucyrus steam shovels for the Nicolaus Railway.

Illinois

Phil. Rouse is erecting an 18-B revolving shovel for M. Hayes & Son, Forreston.

G. Olson is operating a new 100-C Bucyrus shovel for the Brownell Improvement Company at their plant at Thornton. This company also has five 95-ton Bucyrus shovels and one old style Bucyrus shovel.

E. T. Read is operating a 14-B Bucyrus shovel for the Illinois Kaolin Company at Anna.

Indiana

W. J. Kennedy and Guy Kidder are craning a model-31 Marion shovel for Bud McCade who has a sub-contract under Robert Grace on the Erie Railroad at Palmer. Grace's contract amounts to about 40 miles of double tracking, calling for the excavation of a little less than a million and a half cubic yards of material.

Charles H. Flynn is erecting a 225-B Bucyrus coal stripping shovel for Rowland, Rowland, Aten & McCloud at Staunton.

Kansas

Pittsburg and Vicinity

By W. S. Russell

The weather for the past month has been hot and dry enough to suit a Texas horned frog. We pull off our coats and collars and swelter all day and most of the night in the dead air with the temperature around 95. But we needed it to make the corn grow and the crop that was so far behind is growing rapidly.

A queer thing is how the demand for coal keeps up. There has been no slump in prices this summer, which is unusual, and prices are now higher than last month. We quote as follows: Lump per ton, $2.25; Nut per ton, $2.25; Mine Run per ton, $2.00; Mill Run per ton, $1.75; Slack per ton, $1.50, F. O. B. railroad cars at the mines.

The strike of over 3,000 coal miners at the Western Coal Company's underground mines has been settled. The conference between the coal operators and miners union at Kansas City has been continued, but at this writing nothing had been agreed upon, although the prospects appear favorable for a settlement by August first. The miners were holding out for an advance of 3 cents per ton on mine run and 5 cents on yardage.

The 225-B Bucyrus coal stripping steam shovel purchased by the Domestic Fuel Company of Pittsburg has been installed on a field of 360 acres, 4 miles north of Mulberry and is digging out a preliminary cut necessary to excavate before reaching the coal vein. Fred J. Brewer and Frank Wilkinson have had charge of its erection for the Bucyrus Company. C. M. Sweeney is secretary, with offices in the Globe Bldg., Pittsburg.

J. F. Klaner of Pittsburg has bought the Model 250 Marion coal stripping steam shovel owned by the W. W. Patterson Coal Company, located near Ralston on the Frisco Railroad and will continue its operation.

The strike of coal miners employed by the Besse-Cockrill Coal Company, near Weir City has been settled and stripping operations resumed. John Frain is now superintendent of field operations.

McFarland and Hubert, of the Cherokee-Girard Coal Company, are successful coal stripping operators near Minden, Missouri, where they supervise four steam shovels. One for their own company, one for the Hubert Coal Company, and two for the Minden Coal Company. O. S. Hubert gives his personal attention to managing field operations. Alex McFarland is secretary, with an office at Girard, Kansas.

We regret to note the death of J. R. Crowe, the well known coal operaror of Kansas City, president of the J. R. Crowe Coal Mining Company, which occurred on July 14th at his home in Kansas City. He had been in rather poor health for some time and was to have left in a few days for Georgian Bay to spend the balance of the summer. His taking off was very sudden and unexpected.

H. Sternberg and W. H. Meirstein spent a day or two at Pittsburg last month.

Logan Rives of Oskaloosa, and W. H. Meierstein, sales manager for the Arcadia Coal Mining Company, were at Kansas City last month attending the meetings of the coal operators.

Lee Bigley, superintendent for the Moka Coal Company at Mulberry, spent the Fourth at Kansas City.

Amos Thomas of the Sheridan Coal Company at Omaha, spent four or five days at Pittsburg last month on business connected with the company's mines in this district.

Walter Webb who is engaged in coal stripping at Liberal, Missouri, was at Pittsburg on business for a day or two last month.

O. S. Hubert of Minden, Missouri, spent a day or two at Kansas City visiting friends recently.

W. M. Bager and M. L. Fykse, of the Bucyrus Company, were at Pittsburg for several days last month.

There are good opportunities for parties having means to engage in coal stripping in the Kansas field. Strip coal land can be bought or leased at reasonable prices and there is good money in this business. Further information will be furnished by addressing W. S. Russell, Stilwell Hotel, Pittsburg, Kansas.

The Bucyrus Company have a stock of repairs for their coal stripping steam shovels at the W. L. Sullivan Machinery Company store room, which is a great convenience to operators of Bucyrus steam shovels.

The W. L. Sullivan Machinery Company are located on 7th Street near Broadway, where they carry a stock of coal miners' mill, railroad and contractors supplies. They are dealers in machinery, engines, boilers, pumps, motors, etc., for either steam, gasoline, or electric. Also have repairs for Bucyrus steam shovels. Mr. Sullivan will give his personal attention to the wants of their customers.

F. J. Brewer has finished installing a 225-B Bucyrus coal stripping shovel for the Domestic Fuel Company of Arcadia.

W. J. Hudson is at present craning a 70-ton Bucyrus steam shovel for Ball & Peters at Malvern, Arkansas. W. J. Feterly is engineer and Floyd Kelley, fireman.

Louisiana

New Orleans and Vicinity

By the Byrons

The W. E. Callahan Construction Co. of Omaha and Dallas were awarded on July 10th about 800,000 cubic yards of levee work near Ennis, Texas on the Trinity River. Mr. E. S. Heyser of the above company is in charge of their work in Texas. Mr. Heyser has an office in the Busch Building, Dallas. The above work is suited for dragline machine which the above company will do the work with. Mr. O. W. Finley of Ennis is the Engineer in charge.

Mr. Frank Wilkinson erecting engineer for the Bucyrus Co. is at New Orleans erecting two Class 180 draglines and a steel barge for the Mississippi River Commission. Mr. Wilkinson reports that everything is moving along nicely. The two machines will be operated above Greenville, Miss.

C. D. Peavy of Cuero, Texas is opening up quite a large Gravel pit at Cuero. He is installing an 18-B shovel on this work. He has some large contracts with the Southern Pacific Ry. and the County.

Mr. Rittenhouse Moore, president of the Southern Dredging Co. of Mobile was found dead in his room at the Grunewald Hotel in New Orleans on June 28th. Mr. Moore was well known among the contractors of the south and east. He leaves the business of the Southern Dredging Co. in the hands of his son-in-law Dr. Goldthwaite who is vice-president of the company. Mr. Moore was 73 years of age.

Dennison & Rodgers Bros. of Memphis were awarded about 250,000 yards of new levee work on the Arkansas river. Their price was $.297. This is all team work.

Quite an amount of levee work has been let in the last month in the third district. Roach & Stansell got about 240,000 yards. S. R. Hughes Construction Co. got about 200.000 yards. John Sessions and Burt, Bond & McMurray got the sub-levee work. The above contracts amount to about $100,000. All team work.

Reports from San Antonio are that work is very scarce in that city as all of the money from the bond issue that they floated a year or two ago has been spent. It is hoped that more money will be forth coming at an early date.

W. A. Kelly Co. of San Antonio has taken some road work near Cuero, Texas. This contract consists of about 80,000 yards of grading. The above company are using their 14-B Bucyrus machine on this work. Mr. Hugo Kelly is in charge of the work.

Mr. August Beck is operating a 14-B Bucyrus shovel for the W. A. Kelly Co. on their road work near Cuero, Texas.

Mr. C. H. Crawford, assistant engineer N. C. & St. L. Ry. Nashville, Tenn., was a caller at this office recently and reports their construction work progressing satisfactorily.

Much damage was done to both the L. & N. and the N. O. & N. E. Railways tracks during the recent heavy storm in Mississippi and Alabama and a great amount of work will have to be done to put their tracks in normal condition. It is however, surprising the short time it required in putting, especially their passenger service, back into schedule time.

The G. G. Kershaw Contracting Co. of Birmingham, Ala. have started their 150-B Bucyrus stripping shovel on double shift, as the coal company are pressing them for coal having orders ahead of their ability to ship. Mr. Porterfield superintendent advises they have just installed a Bucyrus lighting plant on their shovel.

Anyone in need of a first class steam shovel foreman or superintendent will do well by addressing Robert Vance, Birmingham, Alabama.

The Alabama Fuel & Iron Co. of Birmingham, Alabama are now installing their new 175-B Bucyrus stripping shovel in their iron ore mines at Russellville, Alabama. Mr. J. H. Steele is superintendent of the mines. Mr. Frank Turnbloom will be in charge of this shovel.

Mr. J. C. Maben Jr., vice-president Sloss Sheffield Steel & Iron Co. Birmingham reports their dams and water supply at their mines at Russellville were damaged to some extent by recent heavy storms.

Your correspondent has just returned from a vacation in the state of Michigan where he enjoyed himself immensely but the extreme heat there drove him to the cool breezes of Louisiana.

Major Kerr of the Louisiana State Board of Engineers will let on August first about 1,600,000 yards of levee work in the Tensas district. It is expected that there will be some lively bidding on this work. New Orleans will no doubt be "jammed" with contractors on the day of the letting.

Reports from the Atchafalaya levee work that was let last month are that forces are on this work and that last months estimate was far in advance of the specified quantity. This work consists of about 2,000,000 yards. There are six draglines on this work. Four Bucyrus and two Monighans.

The Mississippi River has not reached such a stage yet as to allow the contractors to go to work below the city. From present indications this is going to be a short year for contractors along the Mississippi.

Mr. A. A. Robinson left the other day for Houston, Texas to operate a Bucyrus 18-B shovel for F. S. Youmans of Houston. Mr. Robinson was formerly employed by D. B. Gore Co. Inc.

Reports from Sugar Valley, Georgia are that everything is moving along nicely with the Sugar Valley Land Co. on their iron ore mines. They are operating a Vulcan "Little Giant" and a new 18-B Bucyrus shovel mounted on caterpillars on their property.

Mr. C. L. Mason of San Antonio, Texas has been in New Orleans loading a dragline for the Uvalde Rock Asphalt Co. of San Antonio to be used in their quarry at Cline, Texas. Mr. Mason formerly operated a Class 9½ Bucyrus dragline for the Von Ormy Gravel Co., Von Ormy, Texas.

Reports from D. B. Gore Co. Inc. are that their new river work where they are using two Bucyrus dredges, is progressing rapidly. Their new roads work where they are operating a Marion dredge is also progressing nicely. They also report that their 17th street Levee work in New Orleans where they are operating a Class 20 Bucyrus dragline will be completed in record time.

Mr. J. S. Whitley has just been appointed superintendent of draglines by Major Slattery of the Mississippi River Commission at Vicksburg. The Bucyrus Co. is now building two mammouth large draglines for Major Slattery. Mr. Whitley will take these two machines on Ash Brook Neck work above Greenville which consists of 2,000,000 yards. Some mighty good records are looked for from this work with Mr. Whitley in charge.

Rollin S. Byron, southern sales representative of the Bucyrus Company was married on June 19 to Miss Gilda Jaunette, a very estimable young lady of Birmingham, Ala. They will reside at 1919 Carrollton Ave., New Orleans. The Excavating Engineer joins their many friends in wishing them a long and happy married life.

Frank Wilkinson is erecting two class-180 Bucyrus draglines for the Mississippi River Commission, New Orleans.

A. G. Carlander of Pascagoula, Mississippi, is operating one of the two Bucyrus dipper dredges for the D. B. Gore Company, Inc., at Baton Rouge. G. E. Moore is superintendent.

H. Martin is operating a new class-20 Bucyrus dragline excavator for D. B. Gore & Company, Inc., at New Orleans.

UMI

Minnesota

News Items from the Twin Cities

By Clapp-Norstrom & Riley,
1308-9 Pioneer Bldg.,
St. Paul, Minn.

The Electric Short Line contract mentioned in our July number as supposed to be a 70-mile extension let to H. F. Balch Co. of Minneapolis, has been temporarily abandoned. The cause for this we are informed is the result of the financial condition existing. This is no reflection on the Electric Short Line, which is a divided paying proposition, but the banks although full with money so we are told hesitate about letting loose of same.

The new St. Paul City Reservoir mentioned in our last issue as being let to Siems, Helmers & Schaffner of this city has been cancelled, some difficulty having developed concerning the foundation covering this project.

Morris, Shepard & Dougherty advise us that they have covered their Wildrose Line from one end to the other with good outfits who all report as making money.

Mint and Will Barnes of Barnes Bros., Des Moines, Ia., blew into our office the other day and the way that they, in a hurry, replenished their pocket books with the writer's money, was a shame. The writer ought to have known better than to enter into a gambling game with two such well known card sharks. The next time they call I can guarantee that a marked deck will be sprung on them.

Boynton, Church & Co., Merchants Bank Building of this city, have about 25,000 yards of wheeler and fresno work to let on the Great Western, consisting of side tracks to be put in between St. Paul and Oelwein, Ia. Mr. Church claims it is very good material and is offering good prices. Idle team outfits of this kind would do well to get in touch with Mr. Church.

For the information of contractors in the Northwest, wish to advise them that we are carrying in stock at the Minnesota Transfer warehouses, a large assortment of Western tools from a dump wagon to a slip, also repairs for same. Orders received at the office before 3 o'clock in the afternoon will be filled on the same date.

Pete Nelson of Minneapolis is kept busy on his South Dakota work and from last reports Pete as well as all of his subs were moving dirt on a paving basis.

We are now getting a little suspicious of Allen Siems' story about the largest tarpoon ever caught in Florida waters, supposed to have been caught by him this winter. All we have seen so far of it, is the scale and as the promised picture of the live fish has not shown up we have commenced to think that Allen either dreamt the story or else enlarged upon same. Awful rumors have it that Allen was seen catching a fairly good sized sun fish. If Allen can even produce a picture the writer will reproduce same in our next issue and apoligize for our suspicions.

W. F. Carey passed through here from Seattle on his way to New York where he and Chester Siems have spent some time. Have not heard from them since they arrived there but am informed that they are accomplishing what they went after. Bill Carey is reported to sail for the Orient the first week in August.

Morris, Shepard & Dougherty of this city were awarded by the C. M. & St. P. contract for constructing the McGregor, Iowa yards. They have already shipped one steam shovel plant down there and may send the second outfit down if necessary.

Morris, Shepard & Dougherty of this city were recently awarded a stripping contract from the Milwaukee at Appleton, Minn., which work they have sublet to Ritchie & O'Connell, Minneapolis, total quantity approximately 20,000 yards.

The Northern Pacific is asking for bids on 35 miles of railway at Dixon, Montana. This work should be let within the next week or so.

The Great Northern has several hundred men at work on its extension of the socalled Sidney line, from Lambert to Richey. Steam shovels and caterpillar engines are being used.

Reports from Sidney state that the Soo, too, is making preparations to build into that place. The probable route to be followed will be from Plaza to a point on the Little Missouri. Such a line would tap a rich district between the Northern Pacific and Great Northern.

Chicago, Milwaukee & St. Paul surveyors are rechecking the survey between Winnett and Grass Point. The force is divided into three large crews, and this activity indicates a purpose to have the line constructed in time to handle the late fall trade. The line is very practicable, involving no serious grades or heavy construction work.

The Oliver Iron Mining Company have seven steam shovels of Bucyrus make in operation, in the vicinity of Hibbing at the present time.

Mississippi

The Bucyrus levee building machine owned by the H. B. Blanks Levee Company, is now in operation at Leota Landing, and doing good work according to C. R. Owens, its operator. This machine had been closed down for some time during the winter due to high water.

Missouri

St. Louis Items

By A. B. Koenig

The Walsh Construction Co. have 150,000 yards of team work at Akron, Ohio, to sublet in quantities to suit outfits. Write or wire them 1312 Citizens Bldg., Cleveland, Ohio.

Mulvill Bros. have finished their grading contract on the Burlington Railroad at West Alton, Mo., and moved part of their outfit on the C. & A. R. R. near Bloomington, Ill.

E. G. Helm, Illmo Hotel, East St. Louis, Ill., has 6,000 yards of levee work to let in East St. Louis.

T. P. Newland has subbed a piece of the C. & A. R. R. work at Bloomington, Ill., from Mulvill Bros.

Joe Sampson, Sioux Falls, S. D., can use a machine outfit for road work in Minnesota.

The J. A. Ware Construction Co., Houser Bldg., St. Louis, Mo., has some nice team work to let on the Wabash Railroad in Indiana. They can also use some teams on day work south of the city here.

E. E. Headley & Son, Marion, Ill., want two or three small team outfits for county road work.

A Bean, Pekin, Ill., has a few teams that he wants to put to work by the day in that neighborhood.

The Carter Construction Co., 2015 Railway Exchange Bldg., St. Louis, Mo., were awarded 130,000 yards of grading on the Saline Valley Railroad which is a part of the Big Four Railroad near Harrisburg, Ill. They will sublet this job in quantities to suit outfits.

McCann Bros. Construction Co., Grand Tower, Ill., have 50,000 yards of levee work in Union County, Ill. to sublet. They have until January 1st, 1917 to complete this.

Hampton & Hodge, 20th and Washington St., Grand City, Ill., have just finished a big timber clearing job at Wolf Lake, Ill. Are in the market for more of this kind of work.

Wm. C. Reed, a first-class all around contractors superintendent is here idle at present. 3662 Cooke Ave., St. Louis, Mo. will catch him.

Dudley Smith has finished his work at Benton, Ill. Is in the market for some more grading for his ten team outfit.

Sheahan Bros., 114 Kentucky Ave., Danville, Ill., have 35,000 yards of road work to sublet.

The L. J. Smith Construction Co., 1116 Commerce Building, Kansas City, Mo. were awarded the contract for 80 miles of bank and cut widening on the Missiouri, Kansas & Texas Railroad between Muskogee and Osage, Okla. They will sublet this in quantities to suit small team outfits. This is all good work and quantities will run from 1000 to 9000 yards approximately. All good material. There is about 1200 yards of solid rock and 6000 yards of loose rock on the work, all of which is red sand stone. Free transportation to and from work on the M. K. & T. R. R. north of Texas for men and outfits.

The Walsh Construction Co. 1312 Citizens Building, Cleveland, Ohio have 150,000 yards of good team work at Akron, Ohio to sublet.

The Carter Construction Co., St. Louis, Mo. sublet 130,000 yards of dirt work on the Big Four R. R. near Harrisburg, Ill. to Houser, Tucker & Headley.

The East Side Levee and Sanitary District are going to let contract for approximately 1,600,000 yards of levee work on Monday, July 24th. Will announce the name of the successful bidder in the next issue.

J. A. Ware Construction Co., Houser Building, St. Louis, Mo. have some nice team work on the Wabash R. R. in Indiana to let.

W. S. Melm, 315 Milligan Building, Decatur, Ill. have 50,000 yards of machine work on County road, three miles outside of Decatur, Ill. to sublet.

J. H. Parrot, 1600 N. 1st St., Terre Haute, Ind., reports his team outfit idle at that point.

F. J. Romer Construction Co., 190 Ramsey St., St. Paul, Minn., want to get in touch with some team outfits for work in the western part of Illinois.

A. V. Fetter & Co. started work last week on their big government and shore protection job on the Mississippi river north of the Missouri.

Chas. Nagel has moved a part of his rock outfit from La Grange, Mo., into Calhoun County, Ill. Is going to furnish rip-rap to the government and A. V. Fetter & Co. during the coming season.

Geo. C. Smith, Jr., of Geo. C. Smith & Sons, Paris, Ill., was in[hunting work for their dragline which is idle at Valmeyer, Ill.

Contractors when in want of work for their idle outfits, write Koenig's Labor Agency, 612 Walnut St., St. Louis, Mo., or 503 Delaware St., Kansas City, Mo.

E. T. Comly is general foreman of the quarry department of the Alpha Portland Cement Company, at Hannibal.

New York

The following bids were received at Albany recently in connection with New York State Road work:

Thomas J. Murray of Le Roy submitted the lowest bid for repair work on road No. 989, Erie county. His bid was $23,559.50

Bids for the construction of these roads are as follows:

Road No. 1069, Clyde Resort, Wayne county, Chambers & Barnes, Rochester, low, $15,128.00.

Road No. 1060, Lyons-Sodus Point, parts 2 and 3, Wayne county, Thomas Grady, Rochester, low, $56,987.50.

Repair Contract, road No. 991, Cataraugus county, P. H. Murray, Rochester, low, $29,657.55.

Road No. 1380, Jamestown-Ashville, Chautauqua county, Fulton Engineering Company, Inc., Walton, low, $123,126.30.

Road No. 1403, Alabama-Batavia, part 1, Genessee county, Michael F. Ripton, Rochester, low, $90,091.50.

No proposals were received for the construction of road No. 773, Woldenville-Lockport, part 2, Niagara county; nor for the Fredonia-South Dayton road, part 3, Cahautauqua county.

The Pennsylvania railroad is contemplating improvements on the Buffalo & Allegheny Division in the vicinity of Oil City that will involve an expenditure of $3,000,000.00. The plans have been prepared and everything is in readiness to proceed with the work as soon as the orders are given.

William Welch is erecting a Bucyrus loader dredge for the Bronx Parkway Commission, Bronxville.

The Upper Hudson Stone Company have recently installed a new 100-C Bucyrus steam shovel in their quarries at Stoneco. Martin J. Lynch is superintendent of the plant, Frank Merritt is operating the Bucyrus and Edward Damm, their Marion shovel.

Ohio

News from Ohio

By Sykes & Coffin

T. J. Walch Construction Company of Davenport, Iowa, will very probably do the grade elimination work of the Pennsylvania Railroad in Columbus, Ohio. The city share of this will be done by H. E. Barthman, Columbus. Mr. Barthman secured about 50,000 yards in this job.

Brocklehurst & Potter are beginning to make things move pretty fast on their piece of work at Delaware, Ohio.

Simmon Small & Son, Mansfield, Ohio, are operating their 14-B Bucyrus on the job of the Ohio Seamless Tube Company at Shelby, Ohio. The job is an extremely difficult one because of the wet ground that they are working in. They are building two reservoirs for the Tube Company which will require the moving of about 50,000 yards. This dirt is moved in two trains of Kopple cars which are pulled by a Plymouth gasoline engine. The job is certainly a wet one. This can be realized from the fact that the waters for these reservoirs are furnished by natural springs in the ground. This work is progressing to early completion now. One of the peculiarities of this work has been the necessity of the engineer on the job, L. F. Bookman, to use the dipper stick and shovel as a hammer. They are moving blue clay and quick sand. They encountered one strip of quick sand about 11 feet deep. When they are not in this they are in watery clay. This condition requires the hammering mentioned above. When the dipper is filled then the dipper stick is given several horizontal thrusts in order to hammer the face so it will stand until the shovel can get back to work again. One of the reservoirs has been finished and is now filling itself up with water. This will give an idea of the difficulty of moving on this job.

The new 88-C Bucyrus shovel recently installed in the plant of the Pebbles Paving Brick Company at Portsmouth, is "a bug in the shale" according to Mr. Chas. M. Stewart, superintendent. He states that the boys are doing splendid work with it and that she is living up to their fullest expectations.

J. H. Jones has moved his class-7 Bucyrus dragline from Tiffin to Fostoria, where it is now working on the reservoir. Wm. Carroll is engineer on the day shift, and Frank Dean on the night

shift. Wm. Driscoll is firing for Frank Dean. The work has been going on very smoothly, but has been held up considerably on account of much rain. E. C. McElvaney formerly with Mr. Jones is now at Worthington, Indiana, operating a class-24 Bucyrus dragline for East & DeFrees. We are indebted to Mr. Dean for the above information.

David Ehrmann is operating a new 88-C Bucyrus shovel for the Peebles Paving Brick Company at Portsmouth. S. C. Peebles is superintendent, C. M. Stewart, master mechanic and C. W. Finny, foreman. This company is also operating a model-60 Marion and a small Thew.

Phil. Rouse has finished installing a 70-C Bucyrus shovel for C. R. Cummins at Worthington.

Oregon

Portland and Vicinity

By L. T. Russell

During a recent visit to the Southern part of Oregon, the writer was much impressed by the lively interest manifested in the proposed railroads. Work of surveying the Strahorn Road is being rapidly carried on while a party of engineers are in the field for the Southern Pacific supposedly to relocate the Natron Klamath Falls cutoff, work on this road being suspended some years since, but local people of Klamath Falls are hopeful of the line being completed at an early date.

Construction work on both irrigation and drainage projects are being carried on in the vicinity of Klamath Falls, by the U. S. Reclamation Service. Mr. J. G. Camp, is project engineer.

The Chapman Construction Company, Mr. N. J. Chapman, president, is engaged on a small irrigation job about 28 miles from town. They are using a clam-shell rig, and have the job nearly finished.

Mr. S. S. Bullis, president of the Rogue River Traction Co., of Medford, Oregon, states that he hopes to do some construction work in the near future on the proposed line to Blue River.

Mr. L. G. Hicks, consulting engineer, Roseburg, Oregon, informs us the proposed Roseburg & Eastern R. R. to Rock Creek has again been held up temporarily because of a disagreement over plans and specifications, it is hoped, however, that matters will be adjusted at an early date so construction can begin.

Mr. Emil Hedburg, master mechanic of the Alaskan Engineering Commissions Railroad at Anchorage is spending a few days in Portland and was a caller at the Portland Office of Bucyrus Company on the 17th. He returns north with his family the latter part of this week.

The Standifer-Clarkson Company, of Portland and the J. A. McEachern Company, of Seattle well known contractors have joined forces and are engaged in ship building at Astoria, Oregon, also they are operating the Monarch sawmill at Kenton, Oregon, a suburb of Portland. Heres wishing them the best of success in the new ventures.

P. G. Dunn & Company are working on their Rainer Avenue job at Seattle and having good success, are also busy with the paving job at Bothell, Washington.

Pennsylvania

Pittsburgh

By F. A. Rumbarger

The P. J. Joyce Company have about completed the elimination of the 33rd Street B. & O. Railroad grade crossing. The first B. & O. train was run over the new elevated tracks the first part of July. This grade crossing has in the past been the scene of many fatal accidents and the new elevated tracks make a big improvement in this section of the city. It is reported that the B. & O. propose to build a new passenger station at this point.

Dick Walton, shovel engineer has been in the city several times in the past month. He expects to operate Booth & Flinn's new Marion 28.

The Pittsburgh Construction Company are repairing the Hot Metal Bridge for the Monongahela Connecting Railroad.

The Duquesne Contracting Company's dragline job at Brunot Island is well under way. "Rube" Broderick is still operating the Bucyrus class 14 dragline.

The National Tube Company are operating their Marion 51 in their stock coal pile at their McKeesport plant.

The last shipment of the Adena Coal Company's coal stripping shovel has gone forward and it is expected that they will be ready to operate within a few weeks.

R. J. Doyle is now operating a 70-C Bucyrus in a rock cut on the Lehigh Valley Railroad in Centralia, for Rhodes Strouce & McArtny.

The Pittsburgh Construction Company are operating a 70-C Bucyrus shovel with a 32 foot boom, a 19 foot 6 inch dipper handle and a 2½ yard dipper at their slag crushing plant at Pottstown. They are also operating a big Vulcan shovel. The Bucyrus shovel is operated by Dan Fleming, D. B. Hoover is superintendent.

George Williams has just completed testing a 160-ton crane for the Bessemer & Lake Erie Railway at Greenville. He states in a recent letter that while there, he met a great many old friends, having worked for this company for three years, about seventeen years ago. Their 55-ton shovel which Mr. Williams set up at that time is still in business. Mr. Williams is now testing a 150-ton crane for the Philadelphia & Reading Railway at Reading, Pa.

Texas

M. C. Coffelt is operating a pile driver for the Texas Pacific Railroad at Marshall.

Virginia

Richmond and Vicinity

By J. G. Skelton

Winston & Company has just been awarded twenty miles of road work in Richie County, West Virginia. The total amount of excavating will be 74,000 cubic yards of which 40,000 yards is steam shovel work. They advise that they will use their 18-B Bucyrus on this work.

The Southern Power Company has just awarded joint contract, to Rinehart & Dennis Company and Hardaway Contracting Company, for three large dams on the Catauba River, near Bridgewater, N. C.

Boxley Brothers & Company of Orange, Virginia and Langhorne & Langhorne of Lynchburg, Virginia have recently been awarded twelve miles of second track work on the C. & O. Railroad up Dry Fork Branch, in West Virginia.

The Southern Power Company has just awarded a contract for the construction of three dams on the Catauba River at Bridgewater, N. C. to Rinehart & Dennis Company of Charlottesville, Virginia, and Hardaway Contracting Company of Columbus, Georgia.

The work consists of 4,500,000 yards of excavating, 50,000 yards of concrete, 40,000 yards of tunnel excavating, and 100,000 yards of rip-rap.

The work is estimated to cost about $3,000,000.00 and will be started at once. The two companies will place about ten steam shovel outfits and a large masonry plant at work on the job, which will be completed at promptly as possible.

Boxley, Goodwin & Bray are operating a 70-C Bucyrus shovel at Elmington, and are moving about 25,000 cubic yards a month. During the month of April, this machine dug 31,085 cubic yards, working eleven-hour days. The material was rock. We are indebted to Mr. A. F. May who is serving as extra cranesman on this shovel, for this information.

As stated in our June number, the Musterfield Sand & Gravel Company are operating a 65-ton Bucyrus shovel at their gravel plant at Massaponax. They will use in conjunction with this machine, a dragline excavator. The new plant has a capacity of over 40 to 50 cars of washed gravel per day. R. L. Rogers is superintendent We are indebted to R M. Rogers for the above information. Mr. Rogers is firing the Bucyrus shovel.

West Virginia

O. C. Perkins who formerly was employed by Winston & Company as cranesman and foreman on a 70-C Bucyrus shovel on their Brown Station, New York contract, is now in Charleston and looking for a job. He may be addressed at Box 218.

Wyoming

O. W. Momsen has completed the erection of a class-24 dragline for MacArthur Bros., Ft. Laramie.

PROSPECTIVE CONSTRUCTION

California

State highway engineer A. B. Fletcher estimates that the amount available for highway construction in California as a result of the appropriation bill recently passed by Congress will be as follows: $155,750 the first year, $311,500 the second, $467,250 the third, $623,000 the fourth, and $778,750 the fifth. This is contingent upon the state's spending an equal amount.

Bond issue of $500,000 for the construction of sanitary and storm sewer system at Fresno has been sold. Call for bids will be issued sometime this month, B. E. Cronkhite is city engineer.

Bond issue of $100,000 for improvement of harbor at Crescent City has been voted. Army engineers have recommended the expenditure of $390,000 more by Federal Government.

An election will be held in Humboldt County, August 29th on the question of issuing bonds to the amount of $1,500,000 for the construction and improvement of 293,5 miles of roads.

October 31st an election will be held on the question of issuing $3,600,000 bonds for road work in Fresno County. The proposed work includes 98 miles of grading, 235 miles of concrete and 108 miles of gravel roads.

Eureka—Election has been called for August 29, to vote on bond issue of $1,500,000 for construction of county highway system.

Canada

Essex County Council has approved the formation of a board to prepare plans for a combined water and sewer system to cost $1,500,000.

Colorado

It is reported that plans are being prepared for financing construction of Moffat Railroad tunnel in Denver. Estimated cost is $6,000,000. Charles Boettcher is president of the Company.

Idaho

Oregon-Washington Railroad & Navigation Co. plans line into Clearwater Timber Belt, Lewiston. About $2,000,000. S. Murray, Portland, Ore., acting chief engineer.

Illinois

An election will be held at Belleville, in St. Clair County, in November, on the question of issuing $1,500,000 road bonds. Address County Auditor.

Iowa

Surveys are being made for the repair and reconstruction of about 23 miles of levee along the Mississippi River, in the vicinity of Muscatine, Iowa. Three different districts are involved in this work, and the plans and specifications will probably be ready in two or three weeks. A large portion of this work is suitable for making hydraulic fill; other portions can be done with dragline excavators and a small portion will be suitable for team work. Further information can be obtained from Elliott & Harman Engineering Co., Peoria, Ill.

Official advertisements will be ready as soon as the plans and specifications can be completed, but, owing to the lateness of the season, the time for receiving bids after the official publications are made will be very short.

Iowa

Chicago, Milwaukee & St. Paul Railway let contract improving yards at McGregor to Morris, Shepard & Dougherty, 814 Globe Building, St. Paul.

Chicago, Milwaukee & St. Paul Railway will start construction shortly at North McGregor on improvements estimated to cost $1,000,000. Work will include new roundhouse and yards.

Ohio

The Northern Ohio Traction & Light Co. proposes an expenditure of about $2,000,000 for improvements. The work will be extended over a long period of time, and will include double tracking on the Akron, Bedford & Cleveland division, $387,000; improvements from Bedford, Ohio, to Newburg, $160,000; double track from Canton, Ohio, to Massillon, $200,000; double tracking the Canton-Akron line between Blue Point, Ohio, and Springfield Lake, $175,000; double track from the Akron, (Ohio) terminal over private right of way to Gorge, $340,000; the completion of a high tension line to Canton, $280,000, and the purchase of an Akron terminal station site, $355,000.

UMI

Oregon

Plans and specifications have been completed by L. G. Hicks, city engineer Roseburg, for the proposed Roseburg & Eastern Railroad. This company contemplates construction of a standard-gage line about 31 miles long to tap a timber section. City has voted $300,000 in bonds to aid the Kendall Lumber Co. in the construction of this line.

West Virginia

Pennsylvania Railroad plans railway from Wheeling to Marianna, Pa. B. M. Langhead, 375 South Main St., Washington, Pa., locating engineer. A. C. Shand, Philadelphia, chief engineer.

Wisconsin

The Wisconsin & Illinois Railroad Co. has applied to State Railroad Commission for permission to issue $350,000 of preferred stock, $300,000 of common stock and $250,000 in bonds to secure money for constructing its proposed line of railroad from Lancaster to a junction with the Illinois Central in Illinois.

Wyoming

Sealed proposals will be received at the office of the United States Reclamation Service, Powell, Wyoming, until 2 o'clock P. M., August 18, 1916, for the construction of canals on the shoshone Project, Wyoming, involving about 572,000 cubic yards of excavation. The work is located near the stations of Mantua and Frannie, Wyoming, en the C. B. & Q. Railroad.

For particulars address the United States Reclamation Service, Washington, D. C., Denver, Colorado, or Powell, Wyoming.

Safety First on Steam Shovel Work

(Continued from Page 419)

needed to pull them off, be sure to keep your cranesman at the throttle of the boom engine.

In putting new or repaired teeth on the dipper, reverse this practice. Place the teeth on the dipper while it is hanging in the air with the cranesman still at his post, keeping a watchful eye. When this is done, place the dipper on the blocks or on the bank. Put your bolts and rivets in and you will be living up to the rule of Safety First. Be sure you are right, then go ahead.

Jones, a traveling man, arrived in Albany "dead broke," and until he could get some money from the firm, he got a loan on his traveling suit at a local pawnbroker's shop. Upon the arrival of his money he took his suit out of "hock" and wore it for the first time when he started for home the following week.

On his arrival home his wife was greeting him as usual, when she noticed one of the pawnbroker tickets attached to his coat, and she asked: "John, what's this ticket attached to your coat?"

John, not wishing her to know he had "hocked" his suit, answered: "Why, you know, I was at a dance in Albany, and it was so warm I checked my coat, and I suppose I forgot to remove the coat check."

His wife accepted the explanation, but on noticing another ticket on his trousers, asked: "John, what kind of a dance was that?"—*The Yellow Strand.*

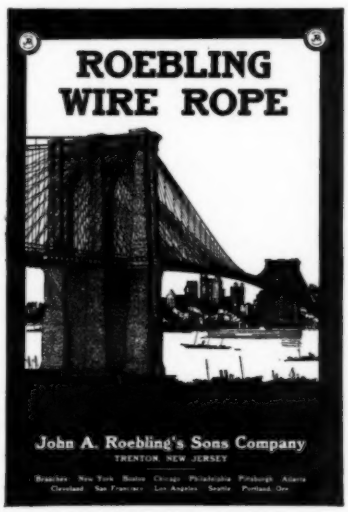
REVIEW OF BOOKS and CATALOGS

We shall be glad to review in this column such books and catalogs as are sent to us. Books reviewed in these columns will be supplied by The Eqcavating Engineer Publishing Company at the price named.

THE LOGIC OF THE DEAN—20 page booklet, illustrating and describing the Dean Boiler Tube Cleaner. It is for free distribution

The William B. Pierce Co.,
65 North Division St., Buffalo, N. Y.

Wire Rope Technical Bulletin



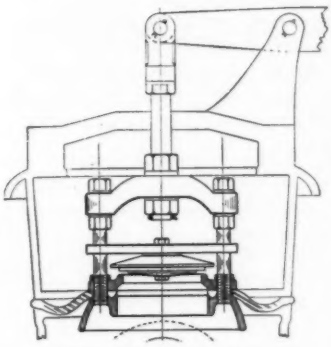
The third number of "Roebling Wire Rope" the technical wire rope bulletin of the John A. Roebling's Sons Company, Trenton, N. J., has been issued. It contains information on Aerial Wire Rope Conveyors (continued) The Right and Wrong Way to Measure Wire Rope. The Oldest Suspension Bridge in America, The Roebling Galvanized Drop-Forged Wire Rope Clip, Wire Rope Practice, Incline Planes, Roebling Wire Rope Slings and Ready Reference Tables.

EXPERIMENTS ON THE ECONOMICAL USE OF IRRIGATION WATER IN IDAHO:—6 by 9, 58 pages and cover. Bulletin No. 339, United States Department of Agriculture, dated April 21st, 1916. A professional paper thoroughly illustrated with photographs, tables, diagrams, etc., by Don H. Bark, Irrigation Engineer, Division of Irrigation Investigations, Government Printing Office, Washington, D. C.

WONDER MIXERS:—Catalogue 8 by 10½, 24 pages. A highly illustrated, well prepared catalogue giving illustrations and specifications of various types of wonder mixers and also details of their construction. The rear part of the catalogue contains an illustrated description of the "double quick" backfiller.

Waterloo Cement Machinery Corp.,
Waterloo, Iowa.

ATLANTIC Pumping Engines



The New Valve that Increases the Capacity More than One-Half.

This new valve in our Diaphragm Pumps prevents splashing and increases capacity more than one-half.

Splashing was largely due to the fact that the upper valve was fixed on one side, and when the valve returned it slapped the water in such a way as to splash it over the top of the pump. A vertical valve has been designed which rises clear, allowing the water to escape on all sides. In making this improvement another thing was accomplished which is even more important—it is found that **the freedom of action in the valve increases the capacity of the pump to more than one-half that of the pump with the fixed valve.** The best results from the 4-inch pump gave 100 gallons of water a minute; with the new valve, under the same conditions, the pump gives 189 gallons of water per minute.

We Carry Single and Double Diaphragm Trench Pumps, Force Pumps and Centrifugal Pumps

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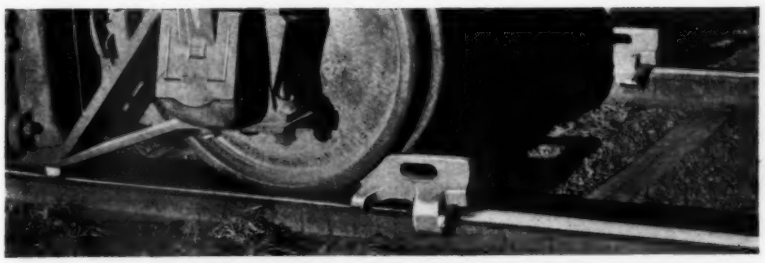

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Wedge Above Rail Not Below
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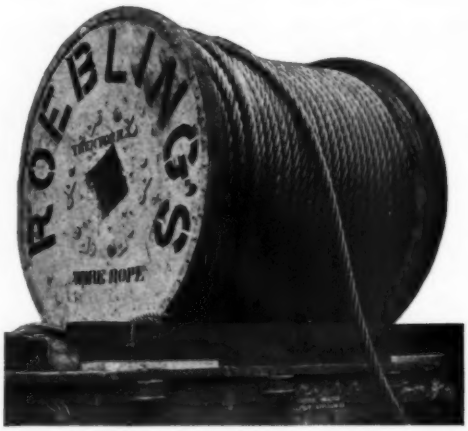

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must be good wire rope.

And the reason why Roebling wire rope is good wire rope is because of the high grade of metal from which it is made; because of the skill and care in drawing and treating the wire; because of the improved methods pursued on the latest machinery developed through seventy-seven years of wire rope manufacture.

Roebling wire rope possesses strength and flexibility in the proper proportion to meet operating conditions in all forms of dredging and reclamation work. Because of its efficient service it is accepted as Standard for all purposes for which wire rope is used.

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The Chain that put the SHOVE in Steam SHOVELS.

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INCLUDING

4—85-C Bucyrus Steam Shovels . . . . . Massachusetts boilers, Shop Nos. about 1650.
6—70-C Bucyrus Steam Shovels . . . . . Massachusetts boilers, Shop Nos. about 1495.
Also number of 70 ton, 45 ton and small Revolving Shovels, all sizes.
6—19 x 24 Baldwin 6-wheel switchers . . . . . 55 ton, built new 1912, used one year.
2—16 x 24 Baldwin 6-wheel switchers . . . . . 40 ton, Shop Nos. about 34444.
4—11 x 16 Vulcan 36 inch gauge dinkies . . Massachusetts boilers, Shop Nos. about 1950.
3—11 x 16 Baldwin 36 inch gauge dinkies . . Massachusetts boilers, Shop Nos. about 34760.
3—11 x 16 Porter 36 inch gauge dinkies . . Massachusetts boilers, Shop Nos. about 5060.
5—10 x 16 Davenport 36 inch gauge dinkies . . Massachusetts boilers, Shop Nos. about 1400.
20—Western 16-yard, 26 feet bed, air dump cars.
40—Western 12-yard, 26 feet bed, air dump cars.
66—Western heavy duty 4-yard, 36 inch gauge side dump cars.
43—Western Standard 4-yard, 36 inch gauge side dump cars.
5—80,000 pounds capacity, 40 feet steel underframe flat cars.

In addition to above equipment, there are included large amounts of rail, boilers, pumps, drills, pipe, hoists, stringers, ties, wagons, grading machines and complete grader outfits, tents and complete camp outfits, crushing plant complete, wagons, extra parts for steam shovels, locomotives and cars, lighting outfits, cables, harness sets, spreaders, push cars and miscellaneous small tools of all sorts.

This equipment was practically all bought new in the last 3 or 4 years and has seen service on one job only. Since it came out of service, this equipment has been overhauled and is guaranteed to be absolutely first-class in every respect and will pass any inspection. Ready for immediate shipment.

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FORTY TON SWITCHERS FOR HAULING STANDARD GAUGE DUMP CARS

Built and Overhauled by the Pennsylvania Railroad in Their Own Shops.
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They are Particularly Adapted for Contractors Service Because They Carry Their Weight Low and Do Not Overturn Easily.
Have Short Wheelbase for Sharp Curves.
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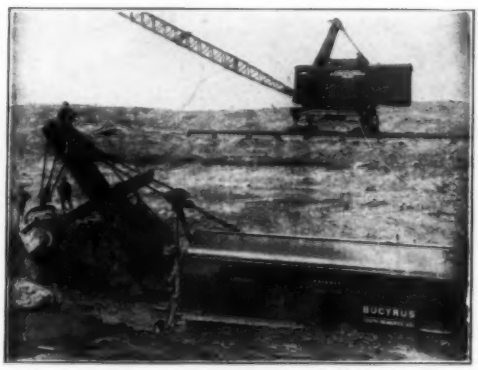
The Digging of the Calumet-Sag Channel



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Sizes Carried in Stock

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Requires a Chain that will stand the Strain

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Is being relied upon for much of the hardest digging—

Here is what Jas. O. Heyworth writes.

"I am using your "Mesabe" chain on the Model "76" Marion Shovel and on the 70-C Bucyrus Shovel and same is giving satisfaction."

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We have a complete Steam Shovel Outfit consisting of:

1 MARION MODEL 50 SHOVEL—2 CU. YD. DIPPER
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ALSO TIES EQUIPPED WITH RAIL CHAIRS AND SHORT PIECES OF 100 LB. RAIL FOR MOVING SHOVEL IN PIT.

This Outfit was purchased new and used by us eight months, is in A1 shape, with some spare parts on hand. Can be inspected at any time.
A quick cash buyer can afford to buy this outfit and store for future use, at the price we ask.

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"OLD RELIABLE" "XX" SHOVEL CHAIN

Some manufacturers make several grades of so-called Shovel Chain.
We make one grade, the

"OLD RELIABLE" "XX" HIGH GRADE CHAIN

The Only Chain That Requires No Guarantee. *Send for Catalog and Prices.*

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Rooms $1.50 up

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Repairs Dipper of Dredge "Gramprus" Working on Florida East Coast, Extension, Key West, Fla.

This repair was first attempted by the oxy-acetylene method but failed as soon as the dipper was placed in service. The second weld was made with Thermit which effected a permanent repair.

Many contractors operating on a large scale have found the Thermit Process to be the most economical and surest way to obtain a permanent repair. Many dredge dippers, dredge masts, connecting rods, and other sections have been returned to service at slight expense.

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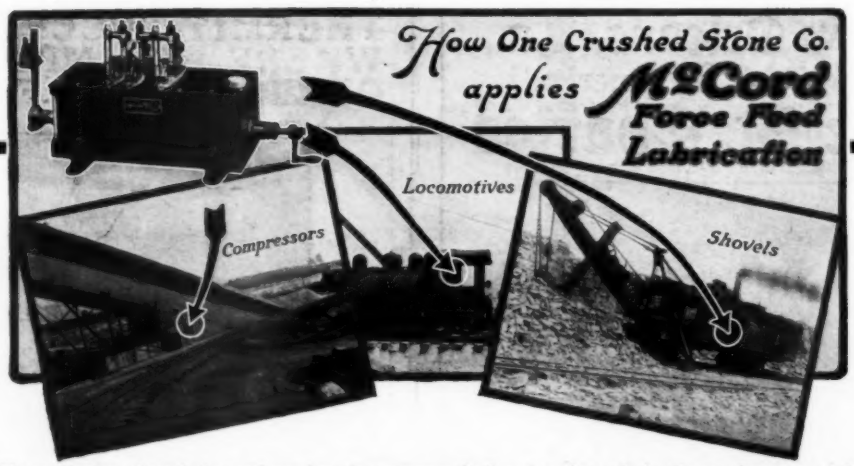

SOME two years ago through the purchase of an air compressor the Superintendent of the France Company of Middlepoint, Ohio, had his first experience with a McCord Force Feed Lubricator.

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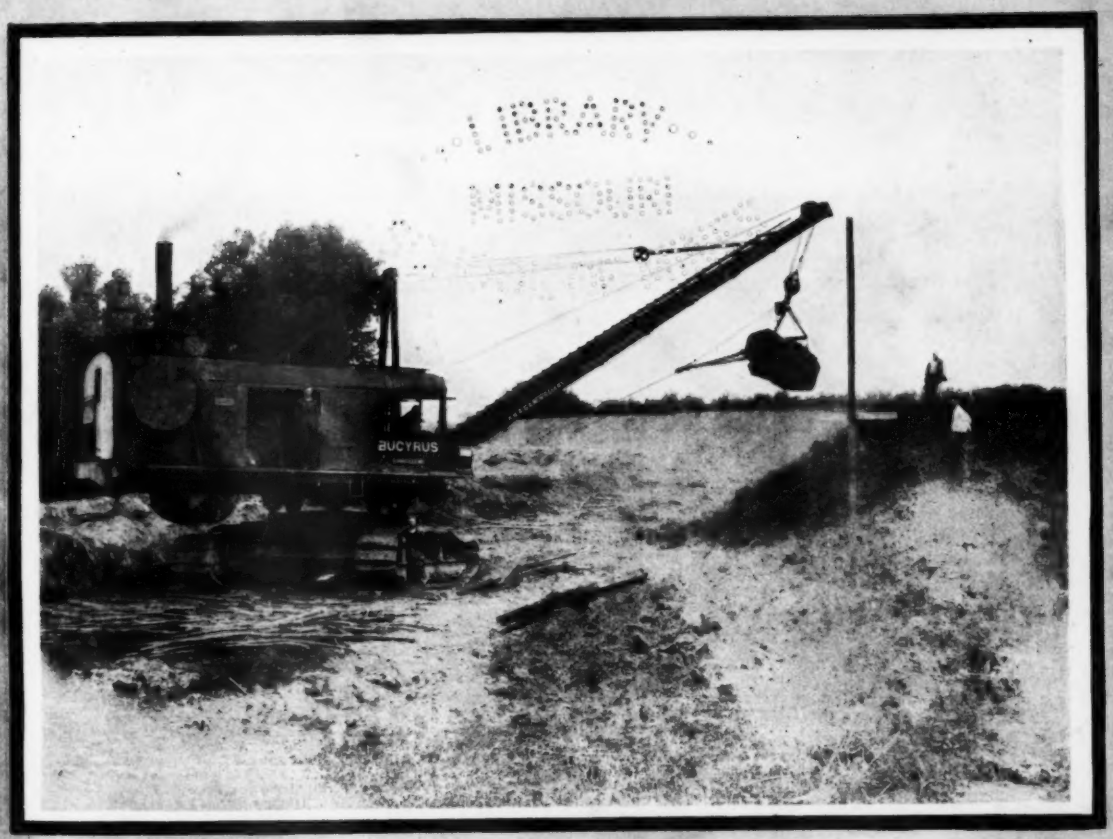
The Excavating Engineer



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Class	14—2	yd. bucket,	60 ft. boom.	Class	175—3½	yd. bucket,	125 ft. boom.

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